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CHILD SEXUAL ABUSE

A systematic review of meta-analytic studies assessing the prevalence of child sexual abuse

and

A meta-analysis of the prevalence of contact and non-contact child sexual abuse as reported by adolescents in the past 10 years

THE UNIVERSITY *of* EDINBURGH

Christina L. Power

Presented in Partial Fulfilment of the Requirements

for the Degree of Doctorate in Clinical Psychology

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Thesis Abstract

Objectives: The thesis comprises two parts. Firstly, a systematic review (SR) systematically examined meta-analytic studies assessing the prevalence of sexual abuse in childhood. A meta-analysis sought to systematically identify and synthesise data from studies providing prevalence estimates of contact and non-contact child sexual abuse (CSA) as self-reported by adolescents within the past 10 years.

Methods: Consistent with Cochrane Collaboration guidelines, the systemic review adopted a comprehensive search of electronic databases and additional sources, including communication with authors working in the field, and the use of ancestry and descendency approaches between February 2013 and March 2014. The meta-analysis also adopted an equally systematic search conducted from March 2013 to June 2014. Assessment of quality and risk of bias were conducted on the included studies using PRISMA criteria and STROBE guidelines.

Results: The systematic review identified six meta-analytic studies for review. The quality of studies and the range of definitional and methodological factors studied varied; results sections were well covered, whereas, quality and risk of bias within studies were generally poorly addressed. Prevalence estimates varied considerably and high heterogeneity was consistent across all analyses.

Nine population studies measuring prevalence of contact and non-contact CSA were included in the meta-analysis. Meta-analyses were conducted overall and across male and female populations. Prevalence estimates varied considerably across studies, with contact CSA ranging from 2% to 39.8% and overall non-contact CSA, estimates ranged from 1% to 24.6%. Substantial heterogeneity was present across all analyses and therefore findings should be interpreted with caution. Nevertheless, the

findings were thought-provoking and most likely due to differences in definitions of CSA and inconsistent use of validated instruments.

Conclusions: Child sexual abuse is an international problem which is highly pervasive across all societies and populations studied. Females consistently report higher rates of CSA than males, and some Asian countries, namely China, produce relatively lower CSA estimates, even controlling for a wide range of methodological factors and study characteristics.

The considerable heterogeneity was apparent both between and within studies and it appears likely based on the current findings, and in the context of previous research, that there are a wide range of methodological and socio-demographic factors which moderate CSA prevalence estimates. More specifically, the lack of a universally recognised definition of CSA proves especially problematic for researchers. The issue is further complicated by use of non-standardised instruments and inconsistent reporting and dissemination of findings. There is a need for future epidemiological studies to adhere to universal guidelines using standard definitions, standardisation of instruments and standardisation of reporting and dissemination to facilitate development of health policies, resource allocation and prevention initiatives for clinical and social services.

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Thesis overview and structure

The thesis comprises two sections, a systematic review which identified existing meta-analytic studies investigating the prevalence of child sexual abuse and a systematic review and meta-analysis of prevalence studies assessing contact and non-contact types of child sexual abuse as reported by adolescents in the past 10 years. The systematic review and meta-analysis generally adhere to guidelines as specified by the Cochrane Collaboration (Clarke, Oxman, Paulsen, Higgins, & Green, 2001), and more specifically, the guidelines for reviews of Non-Randomised Studies (Reeves, Deeks, Higgins, & Wells, 2011).

Both sections of the thesis follow the guidelines for submission for *Child Abuse and Neglect*. Information pertinent to the systematic review, which includes references and appendices, is presented immediately following the main content. Consistent with the format of the systematic review, additional information related to the meta-analysis is presented following the main text.

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A systematic review of meta-analyses assessing the prevalence of child sexual abuse

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Abstract

This review systematically examined meta-analytic studies reporting prevalence estimates of sexual abuse in children and explored factors which may account for high heterogeneity across prevalence studies. A comprehensive search of electronic databases and additional sources was conducted from February 2013 to March 2014. Assessment of reporting quality and risk of bias was undertaken using PRISMA criteria. Six meta-analytic studies were identified for inclusion. The quality of studies and the range of definitional and methodological factors studied varied; results sections were well covered, whereas, quality and risk of bias within studies was generally poorly addressed. Prevalence estimates varied considerably and high heterogeneity was found across all analyses. It was consistently found that CSA is prevalent in all countries where studied, some countries, notably China, produce lower rate estimates, and girls report higher rates of CSA than boys in China. CSA is a widely recognised international problem but there is no universally recognised definition of CSA which proves a challenge for researchers assessing prevalence. Inconsistent use of non-standardised instruments and a failure to address methodological and socio-demographic variables in individual prevalence studies also impede calculation of reliable estimates and may compromise the accuracy of CSA meta-analyses. As such, findings should be interpreted with caution. An international unified approach to investigating CSA is required and meta-analyses building on the recommendations from current research is essential.

Keywords: Child sexual abuse, Adolescence, Meta-analysis, Prevalence, Systematic review

A world report on violence towards children highlights that 150 million girls and 73 million boys under 18 years of age have experienced forced sexual intercourse or other forms of sexual violence involving physical contact (Pinheiro, 2006). Children affected by sexual abuse are at a greater risk of being exposed to adverse experiences over the course of the lifespan and may require lifelong support (e.g. Roylance & Foley, 2012). The short term and long term consequences may manifest through poorer physical and /or mental health, and impact negatively on the development of relationships with peers and adults later in life (Beitchman, Zucker, Hood, Dacosta, & Akman, 1991; Beitchman, Zucker, Hood, Dacosta, Akman, & Cassavia, 1992). The financial costs incurred for society should also not be underestimated; for example, through medical services, child protection services, imprisonment and treatment of offenders and the impact on the legal system and judicial system (Fry, 2012).

The rationale for research in the area of CSA is clear: to develop strategies to ameliorate the effects of CSA, and prevention through service development and provision and research (Radford et al., 2011). International comparative and systematic research through epidemiological research facilitates worldwide awareness and exploration of the role of social and cultural variables (Finkelhor, 1994). Reliable estimates inform policy to address the social problem and assist national and international organisations to develop strategies and polices for the protection and prevention of cruelty towards children (Bolen & Scannapieco, 1999).

Epidemiological studies are accumulating worldwide; however prevalence estimates vary dramatically, which limits the extent to which it is possible to draw accurate conclusions and generalise across studies, both nationally and

internationally. Such differences may represent true differences in prevalence of CSA (e.g. Lalor, 2004), however, researchers speculate that it is more likely that an array of methodological factors and study characteristics influence estimates (e.g. Finkelhor, 1994; Stoltenborgh, van IJzendoorn, Euser, & Bakermans-Kranenburg, 2011; Wyatt & Peters, 1986).

Issues related to defining and operationalising CSA is a significant concern for researchers (Finklehor, 1994). The question of which types of sexual behaviour to include within the definition is unresolved; for example, whether to include non-contact types of CSA, the inclusion of abuse by peers and age discrepancy between offender and victim. The literature also draws attention to the absence of a consistently applied definition, particularly problematic for researchers working in the field (e.g. Collin-Vézina, Daigneault & Hébert, 2013; Putnam, 2003).

There are also methodological considerations. According to Wyatt and Peters (1986) data collection in the form of face-to-face interviews, as opposed to self-report questionnaires and reports using multiple questions to ask about specific types of CSA, are the most important factors accounting for variations in prevalence estimates and age range of participants affect prevalence rates. Recent studies have investigated these factors more closely, however, the findings remain inconsistent across all domains (e.g. Collin-Vézina et al., 2013; Pereda, Guilera, Forns, & Gomez-Benito, 2009a; Pereda, Guilera, Forns, & Gomez-Benito, 2009b; Putnam, 2003; Stoltenborgh et al., 2011).

Systematic reviews and meta-analyses have become an increasingly popular method to summarise and synthesise data from existing research within an empirical framework (Deeks, Altman, & Bradburn, 2008). Such methods inform clinicians of

the most recent research in their area (Oxman, Cook & Guyatt, 1994) and provide a basis for clinical practice guidelines and a rationale for future research (Moher, Liberati, Tetzlaff, & Altman, 2009).

Stoltenborgh and colleagues (2011) argued that it is crucial to know whether design and measurement differences between prevalence studies partly or largely determine the outcomes. To this end, meta-analyses help to identify the set of studies with optimal design features for comparison across time and cultures and can serve to synthesise analytically the evidence from different studies on particular epidemiological outcomes (Stroup et al., 2000). It is important to acknowledge that even accounting for their utility, as with all research and publications, the value of a review depends on methodology, the findings, and the reporting quality of that review. Reviews may vary in scientific rigour, thus impeding an audience's ability to accurately evaluate the strengths and weaknesses of the evidence (Moher et al., 2009).

Child sexual abuse is a highly complex, sensitive worldwide public concern and the magnitude is undeniable (Stoltenborgh et al., 2011). Recently systematic reviews and meta-analyses have also been applied to the study of CSA. Existing data have been pooled to provide more precise prevalence estimates, and investigate potential sources of high heterogeneity, which continue to pose a challenge for researchers (e.g. Barth, Bermetz, Heim, Trelle, & Tonia, 2012; Bolen & Scannapieco, 1999; Pereda et al., 2009b).With these considerations in mind, we identified and systematically reviewed meta-analytic studies providing prevalence estimates of CSA.

Method

A protocol was developed based on the guidelines of widely recognised international groups, namely the Cochrane Collaboration (Clark et al., 2011) and guidelines for reviews of Non-randomised Studies (Reeves et al., 2011).

Literature searches

Observational, non-randomised studies, and/or population based studies were identified. Owing to the well documented difficulties with identification of such studies (e.g. Stroup et al., 2000; Higgins & Deeks, 2011; Higgins, et al., 2013), a sensitivity over specificity approach was adopted (Petticrew & Roberts, 2006; Lefebvre, Manheimer & Glanville, 2011), to searching electronic databases, other specific publication sources (i.e. governmental or institutional websites) and grey literature. Searches were conducted between February 2013 and March 2014 (Appendix 1). No parameters for time period or English-Language only publications restrictions were applied.

Electronic searches The search terms were used in English and comprised of both subject headings, and key words were used in different combinations and truncated where required which related to child sexual abuse (CSA), incidence (prevalence, epidemiological) and type of study (meta-analysis, quantitative review). Databases from various different disciplines were searched (health psychology, social sciences and business): Web of Science, (1985 – February 2014); Science Direct (1985 – February 2014); EBSCOhost Research Databases; PsycINFO **(**1806 to February Week 4 2014); Ovid MEDLINE(R) (<1946 to February Week 2 2014); ProQuest (Applied Social Sciences Index and Abstracts (ASSIA) (1985 –2014); ProQuest (International Bibliography of the Social Sciences (IBSS); Embase (<1974

to 2014 February 27) Cumulative Index to Nursing and Allied Health Literature (CINAHL Plus); Psychology and Behavioral Sciences Collection. The Cochrane Library and Pubmed were also searched up to March 2014.

Ancestry and descendency approaches (Cooper, 1982) were also utilised. References sections in articles and books covering topics related to child sexual abuse and prevalence of sexual violence towards children were examined. Articles published on the topic of child sexual abuse were searched in the following journals: *Child Abuse and Neglect, Child Maltreatment*, and *Child Abuse Review*. This review also utilised subject heading and keyword searches of ISI Science Citation Index, Social Science Citation Index, and Current Contents. No limit on date for publication was imposed.

Journals covering the topic of child sexual abuse were also searched by hand including: *Child Abuse and Neglect, Child Abuse Review, Child and Adolescent Psychiatry and Mental Health*, and *Child Maltreatment*. Unpublished reports (including dissertations) were also sought from Dissertations Abstracts online (EThOS). Grey literature database, (opensigle.inist.fr (opengrey.eu) HMIC Database; NTIS, National Technical Information Service; PsycEXTRA) using key words "child sexual abuse", "prevalence" and "meta analysis or systematic review".

As a further step, experts working in the field were contacted to source additional meta-analytic studies containing prevalence data of CSA, both published and unpublished (Appendix 2). A specified time limit was given of four weeks from time of contact for authors to respond. Authors of studies deemed relevant but which required further information in order to include in the current review were also contacted to provide additional information to include within the analysis. If the

additional information was not provided, studies were excluded on the basis that they did not fulfil the specified criteria. In addition to the expert consultation, a review of the key websites used by child protection programme experts was undertaken including: www.unicef-irc.org; www.ecpat.ent; www.nspcc.org.uk.

Inclusion criteria and study selection

Eligibility of studies was based on the guidelines as suggested by O'Connor, Green and Higgins (2008) and adapted for the reporting of populations and cross sectional studies. Only population-based prevalence studies based on child and adolescents populations were included. This included meta-analytic studies reporting quantitative prevalence data and/or pooled estimates of sexual abuse which occurred during childhood based on epidemiological studies, observational studies and/or cross sectional prevalence studies of CSA. Meta analytic studies which included primary studies reported retrospectively by children, adolescents and adults were eligible. This criterion was applied in order to prevent exclusion of potentially relevant studies and facilitated the inclusion of studies which might examine moderating factors related to the prevalence rates of child sexual abuse. Studies were sourced from scientific literature, peer-reviewed journal, conference abstracts and government reports. There was no limit set on date of publication. All languages were considered and where possible, attempts were made to gain an accurate translation of the language. Selection was not restricted by publication status. Studies which provided prevalence estimates of sexual abuse which occurred during childhood were included.

Studies which reported qualitative data and where participants are selected from specific populations were not considered representative of the general

population and were excluded, as were studies conducted in clinical settings and individual case studies. Meta-analyses which exclusively explored psychological and mental health correlates or conditions associated with CSA, rates explored within certain subgroups (e.g. forensic and learning disability), and physical health, interventions and treatment were deselected. Reviews, commentaries, theoretical discussion, literature and narrative reviews were also excluded.

The first author conducted the search of publications and articles for eligibility screening. The review identified relevant articles reporting prevalence estimates of CSA based on pre-specified inclusion criteria using a funnelling approach and repeated process of data sifting. The study selection process is represented visually in Figure 1.

Once identified, abstracts, including peer-reviewed journal articles, publications, conference presentation abstracts, dissertation abstracts and grey literature executive summaries, were assessed in accordance with the inclusion criteria. If publications were deemed relevant, full documents were retrieved and screened against the criteria. On preliminary inspection, where the title, abstract or executive summary did not provide sufficient information to determine inclusion, the protocol was for the full article to be retrieved for further examination. Articles and other documents that ultimately met the inclusion criteria were reviewed using the data abstraction and quality assessment forms. Studies where criteria were not met, were excluded with reasons (Appendix 3).

Data collection

Data were extracted independently from each meta-analysis by the primary author using a data extraction form (Appendix 4). Where possible, the descriptive

variables coded included: (a) Descriptive data: first author, year of publication year, title, type of study, number of included studies, number of countries included, the aim of the study and the study population); (b) Methodological characteristics: inclusion and exclusion criteria, search strategy, variables coded. Table 1 summarises the key characteristics of the studies in the review, which are numbered 1 to 6, and identified as such throughout the review.

Where missing data were identified, it was reported as NR. Authors from primary studies included in the review were not contacted to confirm or provide additional information where required. It was therefore assumed that data reported in meta-analyses with regard to primary studies was accurate.

Evaluation of methodological quality of the studies and risk of bias

Methodological quality and bias were assessed using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009; Appendix 5). The PRISMA checklist comprises 27 items to assess the reporting of systematic reviews and meta-analysis which can also be utilised as a framework for critical evaluation of systematic reviews rather than providing a quantifiable outcome of quality (Moher et al., 2009).

The checklist was used to guide qualitative assessment of each of the items: title; abstract (structured summary; introduction: rationale, objectives); methods (protocol and registration, eligibility criteria, information sources, search, study selection, data collection process, data items, risk of bias in individual studies, summary measures, synthesis of results, risk of bias across studies, additional analyses), results (study selection, study characteristics, risk of bias within studies, results of individual studies, synthesis of results, risk of bias across studies and

additional analyses) and discussion (summary of evidence, limitations and conclusions).

Two reviewers independently coded each meta-analysis according to PRISMA checklist items (Moher et al., 2009). Discrepancies were resolved by consensus by correcting errors and clarifying category definitions (Appendix 6). An individual components approach was assumed when reporting findings of methodological rigour and methodological quality, contrary to providing overall quality scores (Juni, Witschi, Bloch, & Egger, 1999).

Results

Search results

A total of 236 papers was identified from electronic searches (n = 191) and additional sources (n = 45). Following exclusion of duplicates (n = 65), 151 articles were excluded at the initial screening as they failed to meet the inclusion criteria. Twenty full text papers were assessed as meeting criteria, and of those, fourteen were finally excluded. Six meta-analytic papers fulfilled the inclusion criteria: (1) Peng et al., 2013, (2) Ji et al., 2013, (3) Stoltenborgh et al., 2011, (4) Barth et al., 2012, (5) Pereda et al., 2009b, (6) Bolen & Scannapieco, 1999. The paper by Peng and colleagues (2013) was published in Chinese and was translated by a colleague fluent in Chinese and co-rated for reliability by two investigators. The title of the paper identified the study as *incidence* of child sexual abuse, rather than prevalence. Incidence and prevalence are separate constructs in CSA research and the distinction between these definitions is made by authors working extensively within the field of CSA (e.g. Stoltenborgh et al., 2011).

The first author of this review examined the studies included in the Peng et al.'s review and of those 15 included, the studies were reported as being self-report prevalence studies, as opposed to studies providing prevalence estimates based on the official reports and professional rating within a specified time period (incidence reports). It was therefore decided to include Peng et al.'s (2013) meta-analysis in this systematic review.

Characteristics of the included studies

General Characteristics Studies were published in peer-reviewed journals. One was published in 1999 (6) and five were published between 2009 and 2013 (1-5) First authors were from countries including North America, Switzerland, Spain and the Netherlands. Three meta-analyses assessed worldwide prevalence of CSA (3-5); two assessed CSA in China (1-2) and one in North America (6). Meta-analyses used prevalence data conducted with children and adults, (1-3, 5), children and adolescents (4), and adults only population (6). Five studies used primary studies providing prevalence estimates based on self-report, whereas one international meta-analysis used both informant studies and self-report studies (3). Samples were recruited from the general population, including community and student samples and reported prevalence rates for males and females.

Methodological quality of included studies

The agreed ratings for each PRISMA checklist item are presented in Table 2 (Appendix 7). Items were coded as follows: '0' – where the criteria was not met, '1' = where study partially met criteria, '2' = the study fully met the criteria. All items were applicable, however, PICOS is referenced in items 4, 6, and 11 and therefore

"I", intervention, was not applicable, as studies were observational. There was an 88% agreement between raters with a Kappa of 0.80 (95% CI 0.73 to 0.89; Appendix 8).

Meta-analyses were characterised by different methodological strengths and weaknesses. Strengths noted across meta-analyses were an explanation and rationale for the study and the main objectives. Inclusion and exclusion criteria of primary studies were generally clearly specified. The meta-analyses mostly identified, selected and reported information covering sources, study selection and data items and collection processes to enable the reader to facilitate replication of search. All meta-analyses provided adequate details of study characteristics and discussed their findings in the context of substantial heterogeneity, highlighting the main limitations and confounding factors associated with the results. Investigations also involved additional analyses (e.g. sensitivity or subgroup analyses, meta-regression), where specified.

There were, however, several methodological concerns. Firstly, only one of the six meta-analyses used a clearly specified form of quality assessment of the primary studies. Peng et al.'s (2013) analysis referred to use of a pre-defined protocol and gave attention to specific quality assessment of included studies (e.g. using Loney criteria). The absence of this type of information was a limitation of other included analyses. A serious methodological concern across the majority of the meta-analyses was the absence of clear and sufficient information to determine whether it was appropriate to combine the data from primary studies. The lack of consistent reporting of prevalence figures across included studies was a notable feature of the studies and estimates of CSA were expressed differently numerically across analyses.

This presented as a challenge in terms of interpretation and comparison of data, as reflected in the results section.

Prevalence of child sexual abuse

The meta-analyses included in this review clearly highlight that child sexual abuse is a global problem reported by males and females from adult and child and adolescent populations.

Bolen and Scannapieco (1999) reported that 20% of girls and 7% of boys experience CSA; estimates for females ranged between 2% and 45% and 2% to 16% for males (mean: 7.17, SD 4.08; mean: 19.59, SD, 10.77, respectively). Authors suggested that at least 30% of all female children experience some form of sexual abuse and up to 40% may be abused. The figures for males were not as precise because surveys for men employed a maximum of 4 screening questions; however, authors concluded that 15% of boys experience some form of sexual abuse.

In Pereda et al.'s (2009b) international review, a combined pooled estimate was not provided. A mean prevalence of CSA in males was reported as 7.9% (6.0–10.3, 95% CI), and 19.7% (16.7–23.0, 95% CI) for females; prevalence for females was significantly higher than that for males (Q (1) =35.662; pb.05). In the second international review, Stoltenborgh et al. (2011) reported a combined estimate of 11.8% (95% CI: 10.0–13.8%; $p < .01$). The combined prevalence for female samples was 18.0% (95% CI: 16.4–19.7%; $p < .01$), for males 7.6% (95% CI: 6.6–8.8%; $p < .01$). Significant gender differences were found in Asia, Australia, Europe, and United States/Canada, with girls showing a higher combined prevalence than boys.

In the meta-analysis based on youth surveys, prevalence was estimated at 15% for girls and 8% for boys (Barth et al., 2012). Pooled estimates of CSA across gender

and type of sexual abuse ranged from 0 to 69% for girls and 0 to 47 % for boys. For type of abuse, the pooled estimate for girls was 9 % for forced intercourse (CI 6–14 %; PI 1–41 %) and 15% for mixed sexual abuse (CI 9–24 %; PI n.a.). For boys, the pooled prevalence estimate was 3 % for forced intercourse (CI 1–9 %; PI n.a.) and 8 % for mixed sexual abuse (CI 4–16 %; PI n.a.). Barth et al. (2012) also reported estimates for non-contact abuse (n = 9) pooled PE was 17 % (CI n.a.) for males and 31 % (CI n.a.) for females (below 18 years of age). The prevalence estimates for contact abuse (n = 11) were 6 % for males (CI 2–16 %) and 13 % (CI 8–21 %) for females. The highest prevalence estimates of CSA were for non-contact abuse (17 %; upper CI [50 % for males and 31 %; upper CI [50 % for females) and mixed sexual abuse (8 %; CI 4–16 % for males and 15 %; CI 9–24 % for females). Slightly lower rates were reported for contact abuse (6 %; CI 2–16 % for males and 13 %; CI 8–21 % for females) and the lowest for forced intercourse (3%; CI 1–9% for males and 9 %; CI 6–14 % for females).

Peng et al. (2013) reported a combined rate of 18.2% (95% CI: 13.74% - 22.66%) and the estimate for CSA involving physical contact was higher for girls (11.22%) than boys (8.25%) and was statistically significant (Z = -2.245, $p = 0.025$). The rate of non-contact sexual abuse between genders were not statistically significant (both p values > 0.05).

Ji et al. (2013) stratified the range and pooled prevalence of CSA across gender. The estimate for total CSA (including non-contact) among females was 15.3% (95% CI = 12.6–18.0) (n = 24). For females, the pooled estimate for contact CSA, was 9.5% CI (7.5–11.5) (n = 16) and 1% (95% CI = 0.7–1.3) (n = 15) for penetrative CSA. For males, the pooled estimate was 13.8% (95% CI = 11.0–16.5), (n = 20); for

contact 8.0% (95% CI = 6.5–9.6) (n = 12) and 0.9% (95% CI = 0.3–1.5) (n = 12) for penetrative CSA.

Heterogeneity within meta-analyses

High heterogeneity was a core feature across all meta-analytic studies of CSA. Barth and colleagues (2012) reported high heterogeneity of primary studies (I^2 = 98–100 %), particularly across mixed sexual abuse (I^2 = 99% and I^2 = 98%). Ji et al. (2013) reported considerable heterogeneities and variation in the range of total, contact, and penetrative CSA estimates for total CSA (Q = 996.898, df = 19, p < 0.001), contact CSA (Q = 149.291, df = 11, p < 0.001), and penetrative CSA (Q = 196.232, df = 11, p < 0.001) in males and total CSA (Q = 1,472.966, df = 23, p < 0.001), contact CSA (Q = 414.476, df = 15, p < 0.001), and penetrative CSA (Q = 47.462, df = 14, p < 0.001) in females.

High heterogeneity was also a feature of Pereda et al.'s (2009b) review. Analysis of homogeneity in the data as regards gender revealed variability among the studies with males (Q (36) = 1582.04; pb.05) and those with women (Q (62) =4963.40; pb.05). After eliminating outliers, the prevalence of sexual abuse among males was 7.4% (5.7–9.4, 95% CI), while the figure for women was 19.2% (16.3–22.5, 95% CI), though there continued to be heterogeneity between studies. Peng et al.'s (2013) review also showed significant heterogeneity, reported as (p < 0.05).

Sample characteristics and methodological factors associated with heterogeneity

Five meta-analyses included data relating to geographical and regional characteristics of the studies (Bolen et al., 1999; Pereda et al., 2009b; Stoltenborgh et al., 2011; Barth et al., 2012; Ji et al., 2013).

Pereda et al. (2009b) reported the only variable, except gender, with a significant effect on CSA was continent. The highest prevalence rate of CSA was in Africa (34.4%; 21.1–50.7, 95% CI), compared to Europe, which showed the lowest prevalence rates (9.2%; 6.8–12.3, 95% CI). America, Asia and Oceania had prevalence rates between 10.1 and 23.9%. Area also appeared to influence the prevalence of CSA among women, with the values in local samples higher than in national ones (22.0%; 18.2–26.3, 95% CI; 14.7%; 10.7–19.8, 95% CI); although no such difference was observed with males, (8.6% (6.1–12.0, 95% CI; 6.5%: 4.0–10.5, 95% CI). Similarly, Stoltenborgh et al. (2011) found continent of origin was one of two significant moderator variables which impacted on CSA prevalence, apparent for girls as well as for boys. The highest rates were found for girls in Australia (215/1000) and for boys in Africa (193/1000) and the lowest rates, for both girls (113/1000) and boys (41/1000), were found in Asia.

Lower prevalence estimates were consistently found in Asia (Pereda et al., 2009b; Stoltenborgh et al., 2011; Ji et al., 2013). A prevalence rate of 10.1% for Asia as a whole compared to 14% for all countries was reported by Pereda et al. (2009b). The rate for Chinese women specifically was 10.8% vs. 19.7% for women in all countries. For males, the Chinese rate was 4.8% vs 7.9% for males in all countries. Rates for Asian women (based on 11 Asian studies, 4 of which originated from China) were 11.3% vs. 18.0% for all countries. For males, the comparison was 4.1% (8 studies) for Asia vs. 7.6% for all countries (Stoltenborgh et al., 2011). This finding was further supported by Ji et al. (2013) where pooled rates for women for contact and penetrative sexual abuse (9.5% and 1.0%) were significantly lower than comparable international estimates of penetrative CSA of females estimated at 15.1%

and 9.0% (Stoltenborgh et al., 2011; Barth et al., 2012). Chinese males also reported less penetrative CSA than the international estimate (0.9% vs. 6.9%), approximately equivalent contact CSA (8.0% compared to 10.7%), although not significantly different. Interestingly, the total CSA for males in China, 13.8%, appears to be higher than the international average both as estimated by Stoltenborgh et al. (2011) at 7.6% and by Pereda et al. (2009b) at 7.4%.

With regards to differences across country, Pereda et al. (2009b) found South African studies yielded the highest prevalence rates for both males (60.9%) and women (43.7%), Jordan provided the second-highest prevalence rate for males (27.0%), followed by Tanzania (25.0%). Rates between 10 and 20% are reported for males in Israel (15.7%), Spain (13.4%), Australia (13.0%) and Costa Rica (12.8%), while the remaining countries all had prevalence rates below 10%. The lowest rate corresponded to the only study conducted in France (0.6% for males and 0.9% for females). The rates for women were reported as, Australia (37.8%), Costa Rica (32.2%), Tanzania (31.0%), Israel (30.7%), Sweden (28.1%), the United States (25.3%) and Switzerland (24.2%). New Zealand (18.7%), Spain (18.5%), Great Britain (18.2%), El Salvador and Norway (16.9%), Singapore (15.9%), Canada (15.2%) and China (10.8%) all feel between 10 and 20%. The remaining countries had prevalence rates below 10%.

When examining regional differences, Ji et al. (2013) found lower rates of total CSA reported by females in studies from urban areas and non-mainland provinces in China; lower rates for males were found in studies from non-mainland provinces, although no difference between studies of males in relation to urban vs. rural/unspecified. The analysis also showed rates to be lower when they included

non-mainland sites, including Hong Kong and Taiwan, which was significant in the meta-regression for total CSA for females and males.

Economic development of the sample's country was also investigated as a potential moderator of CSA estimates in three reviews (Pereda et al., 2009b; Stoltenborgh et al, 2011; Barth et al., 2012). Stoltenborgh et al. (2011) reported that combined CSA prevalence was higher in low-resource countries than in high-resource countries, although significant differences were found for boys but not for girls. Barth et al. (2012) reported inconsistent findings when investigated HDI. For females, lower prevalence was found for countries with moderate HDI, and countries with high and low HDI showed the highest prevalence for CSA. HDI did not affect prevalence rates in males. Barth et al. (2012) concluded that in terms of regional distribution and degree of development of the country, their findings did not show any statistical differences between studies concerning prevalence estimates of CSA. Furthermore, Pereda et al. (2009b) did not find significant results with regards to level of economic development of a county.

Definition of abuse was also identified as a potential moderator of CSA prevalence. Stoltenborgh et al.'s (2011) rates were based on the three definitions of CSA (cf. Stoltenborgh et al., 2011, Table 2, p.85), (1): "Broader than NIS-3" refers to total CSA including both physical contact and non-physical contact CSA; "stricter than NIS-3" refers to penetrative CSA; and "NIS-3" refers to physical contact CSA. Significant differences were reported only for girls, with studies using the NIS-3 definition resulting in higher CSA, followed by studies using a broader definition. Studies using a stricter definition reported the lowest combined prevalence was reported where studies used a stricter definition (Stoltenborgh et al., 2011). Ji et al.'s

(2013) estimate for contact CSA was higher than that of total CSA in Stoltenborgh et al.'s study (2012) which they suggest was due to consistent use of the NIS-3, due to the definition provided by included studies.

Definition of CSA (i.e. broad vs. narrow) was not found to be a significant moderator variable according to Barth et al. (2012). Similarly, Bolen and Scannapieco (1999) did not report a significant difference with regards to definition. Furthermore, Pereda et al. (2009b) also reported no significant difference in combined prevalence rates between broad definition (including non-contact abuse) and narrow definition (contact only CSA).

With regards to sampling, Barth et al. (2012) reported higher prevalence rates in studies which used non-random samples (i.e. samples from schools or specific populations). Meta-regression results also showed a trend for higher prevalence rates in school or specific samples ($p = 0.10$) than in the general population. Stoltenborgh et al. (2011) reported that sampling procedures were significant for boys only. The combined prevalence reported in studies using male convenience samples was approximately twice the combined prevalence reported in studies using male randomised samples. Furthermore, the larger the sample size, the lower the combined prevalence for both girls and boys (Stoltenborgh et al., 2011).

Instrument and administration was also explored as a potential moderator variable and findings were also inconsistent. Barth et al. (2012) reported a slightly higher prevalence rate of forced intercourse in girls when data were collected by interview (vs. questionnaire) ($p = 0.09$). A similar result was found for any type of CSA in Stoltenborgh et al.'s (2011) meta-analysis where combined prevalence differed between the types of instrument used to assess CSA for girls, although not

for boys. Studies using a computerised questionnaire yielded the lowest combined prevalence, whereas the highest rates were reported in studies using paper-and-pencil questionnaires. The combined prevalence of both types of interviews – face-to-face and by telephone – was in between the types of questionnaires. Bolen and Scannapieco (1999) found that telephone interviews yielded higher prevalence estimates of CSA than face to face interviews, although only for males. Even so, type of survey was not found to be a significant factor. Pereda et al. (2009b) did not find statistical differences with regards to instrument administration and sampling.

Barth et al. (2012) also found that for both genders, whether studies used a validated or a non-validated instrument was not a factor of influence on combined prevalence. In Ji et al.'s (2013) meta-regression however, Chen's instrument was a significant predictor of contact and total CSA prevalence for females; however this was not replicated for contact CSA and total CSA prevalence for males, where Chen's instrument did not predict contact CSA prevalence for males.

Bolen and Scannapieco (1999) reported that number of screening questions accounted for the greatest variance in prevalence of CSA. Greater number of questions was positively associated with higher prevalence of CSA for both males and females. This finding was partially supported by Stoltenborgh et al. (2011) as number of questions affected pooled prevalence for girls, although not for boys. A greater number of questions about CSA were associated with a higher combined CSA prevalence for girls but not for boys. Barth et al. (2012), Pereda et al. (2009), and Ji et al. (2013) found no variation in prevalence estimates due to number of questions used to assess CSA.

Stoltenborgh et al. (2011) was the only meta-analysis which compared studies using self-report measures of CSA with studies using informant reports and of which showed a significant difference in combined prevalence Q(1) ¼30.03; $p < .01$. The combined prevalence was 0.4% (95% CI: 0.1–1.5%) for informant studies (k ¼ 8, N ¼ 9,500,797) and 12.7% (95% CI: 10.7–15.0%) for self-report studies (k ¼ 323, N ¼ 410,951).

Discussion

CSA was a global problem reported worldwide by males and females in all countries studied. There was considerable variability in prevalence estimates; however, even lower boundary estimations provided in studies are alarming and demonstrate the problem affecting the lives of many children (Stoltenborgh et al., 2011). All included meta-analyses showed that females consistently report higher prevalence rates of CSA than males drawing from adult and child and adolescent samples. One meta-analysis concluded that females have a two to three times greater risk of being sexually abused during childhood compared to males (Barth et al., 2012). These findings are unsurprising in the context of previous research (e.g. Finkelhor, 1994; Pereda et al., 2009a; Rind, Tromovitch & Bauserman, 1998).

Researchers have continued to explore possible explanations to explain the comparatively low prevalence estimates for males. One is that experience of CSA may not be accurately captured in male respondents by the definitions or questions used within studies (e.g. Pereda et al., 2009b). It has also been speculated that the rates are an underestimate of prevalence due to boys' reluctance to disclose their CSA experiences (e.g. Dhaliwal et al., 1996). More specifically, social, cultural and psychological factors, which include negative attitudes and stereotypes, constructions

of masculinity, and fear of being labelled as weak or homosexual, may explain why disclosure leads to an underestimation of CSA experiences in boys (e.g. Goldman & Padayachi, 2000; Dhaliwal et al., 1996; Kenny & McEachern, 2000b).

Interestingly, Stoltenborgh et al. (2011) found that prevalence was higher in boys when reported by adult samples, which was not replicated for girls. The authors suggest that this may be an indication that it takes longer for males to report their CSA experiences. Even so, the findings are clear, the reported disclosure rates are higher for females than males irrespective of contextual characteristics and methodological factors and are therefore at greater risk of being sexually abused during childhood compared to males (Barth et al., 2012).

One of the most striking findings from the review was the wide variation of prevalence estimates and considerable pervasiveness of heterogeneity between studies. It was widely concluded that included studies were heterogeneous, unsurprisingly so given the varied characteristics of the included studies. All meta-analyses recognised that high heterogeneity would be a challenge and as such, a range of study characteristics and methodological factors were explored as potential moderating factors.

Methodological differences may account for some of the discrepancies in variation estimates (Leventhal, 1998; Finkelhor, 1994). As illustrated in the results section however, exploration of methodological differences as potential moderating factors demonstrated inconsistent findings across meta-analyses. This is not dissimilar to previous reviews, which have offered varying degrees of support for the influence of characteristics factors on prevalence (e.g. Finkelhor, 1994; Pereda et al., 2009a; Wyatt & Peters, 1986). It was not possible in this review to conclude with

certainty that specific methodological factors operated consistently as moderators of prevalence across all analyses (e.g. economic development, sample characteristics, mode or method of data collection, number of screening questions used to assess CSA).

It is perhaps more pertinent to consider what may account for these differences. Stoltenborgh et al. (2011) highlighted specific differences between their meta-analysis and the previous international review by Pereda et al. (2009b) in that they investigated a greater number of moderator variables and included more studies and conducted their calculations separately for boys and girls, all of which were limitations of Pereda et al. (2009b). Other studies used pooled estimates (males and females) to analyse moderator factors (e.g. Pereda et al., 2009b) or conducted separate analyses (Ji et al., 2013; Stoltenborgh et al., 2011). This may also have influenced the reported prevalence rates making it more difficult to compare findings from meta-analyses. For example, Stoltenborgh et al. (2011) found that some of the moderator variables included in their study influenced CSA prevalence rates for both boys and girls (e.g. sample size), whereas others influenced rates only for one gender.

Three of the six reviews utilised international studies; however, of those, two utilised data originating from both child and adolescent and adult samples, and did not provide separate figures for each (Pereda et al., 2009b; Stoltenborgh et al., 2011). This limitation is understandable to some degree as individual studies have not tended to focus on youth surveys until recently; however, the use of adult samples has previously been a source of concern in relation to the study of CSA, because reports from adult samples relating to CSA experiences are subject to recollection bias (e.g. Barth et al., 2012).

It is also of significance that with the exception of one meta-analysis (Barth et al., 2012), time restrictions were not imposed on the included studies. As illustrated, research investigating CSA has increased considerably over the past decade. There has been a move towards more unified measures and attempts to provide a uniform definition of CSA, although this continues to prove challenging. Nevertheless, there has been a move towards employing more rigorous methodology, in the form of developing more sensitive tools (e.g. Juvenile Victimisation Questionnaire, Hamby et al., 2004) which include non-contact types of CSA; older studies are disadvantaged in this regard.

Stoltenborgh et al. (2012) was the only meta-analysis which included both self-report and informant studies. Moderator analyses of self-report surveys vs. informant rates revealed significant findings, indicating a difference in combined prevalence between studies using informant and self-reports. It is important to add that this is an important strength to their study as this has previously been addressed in the literature as a difficulty in term of differentiating these studies in order to provide accurate estimates. As hypothesised their findings support previous reviews which suggest that informant studies may be an underestimate of the actual prevalence of CSA (e.g. Goldman & Padayachi, 2000) as fewer are reported and this may be influenced by timeframes imposes.

In order to provide the most accurate, up to date research, meta-analyses would benefit from drawing from the most homogenous set of studies possible. A clear drive towards individual studies using uniform definitions of CSA, and standardised measures and reporting is essential. Barth et al. (2012) included only empirical studies reporting the prevalence of CSA for which the data were collected

after 2000 and in which the participants were below 18 years old for such reasons. The authors excluded studies for which the country was unknown and the sample size was below 1,000. The author's rationale for application of the latter criterion was to exclude studies with low statistical precision and low reporting quality.

This review is subject to limitations. Selection of studies relied on the submissions of publications by national and international, government and non-government organisations, the grey literature, researchers and experts working in the area. Attempts were made to minimise this limitation through the systematic search process and by consulting experts working in this area to identify further reports and studies. Nevertheless, it is possible that some published studies may have been overlooked. Liberati and colleagues (2009) highlighted that 50% of 300 authors did not mention the terms "systematic review" or "meta-analysis" in the title. If authors do not include meta-analysis or systematic review in the title, indexing and identification of relevant articles may be overlooked.

A further limitation was the use of the PRISMA quality assessment tool in this review. Although a well validated and appropriate tool for evaluating methodological quality and risk of bias of meta-analyses, such tools are subject to bias. Attempts were made to minimise subjectivity through dual quality assessment ratings conducted by independent researchers and inter-rater reliability was assessed and reported as being at a relatively acceptable level. It is also highlighted that this review focussed on meta-analyses which have attempted to consolidate and quantitatively synthesise data from existing studies. However, the value of a meta-analysis depends greatly on the methodology, findings and the overall quality of the included studies. As such, systematic reviews and meta-analyses may vary in

scientific rigour, thus impeding an audience's ability to accurately evaluate the strengths and weaknesses of the evidence (Moher et al., 2007). There are risks associated with meta-analysing data that are clearly heterogeneous. With this in mind, serious consideration should be given as to whether it is indeed possible or helpful to seek 'global' or cross-cultural prevalence rates for sexual abuse (Schönbucher, Maier, Mohler-Kuo, Schnyder, & Landolt, 2012).

Continued epidemiological study of CSA is required to examine the social impact within society, inform public policy, and to develop and evaluate service provision across national and international populations (Leventhal, 1998). However, only the most rigorous prevalence studies will contribute to our current knowledge base and poorly designed and executed studies will only add to the confusion (Bolen & Scannapieco, 1999). Uniform definitions of CSA are required to obtain valid assessments CSA prevalence (Schönbucher et al., 2011). Future studies require sufficiently large population based samples which are generalisable to the general population using multiple behaviourally specific questions (Stoltenborgh et al., 2011). Well-designed and validated instruments, avoidance of face to face interview formats and attention to methodological standards when sampling large populations over multiple sites (Ji et al., 2013). Future studies should also consider the influence of inhibited disclosure, cultural factors and sexual attitudes all of which may have an impact on CSA (Ji et al., 2013).

Observational studies may be at risk of misleading results if they are flawed in their design or conduct, referred to as 'risk of bias' (Guyatt et al., 2011) and therefore an accurate assessment of risk of bias is fundamental. Methodological quality and assessment for risk of bias in epidemiological and observational studies

can be assessed systematically. There are instruments which may prove suitable, for example, rating systems developed by Loney et al. (1998) and the STROBE Statement (Vandenbroucke et al., 2007).

Regular updated systematic reviews of prevalence estimates of worldwide CSA are required to detect changes over time, allow for data comparisons and to keep up to date with the accumulating research (Barth et al., 2012). It is essential that reviews successfully identify relevant studies which provide adequately reported data. Meta-analyses are compromised by the problem of high heterogeneity between studies which complicated interpretation of findings. As such, there is a need for guidelines regarding the assessment of CSA (Barth et al., 2012). Further suggestions would include closer attention to the grey literature and narrative reviews which may provide valuable information. All attempts to minimise all potential sources of bias where possible should be taken, for example, sourcing all relevant and good quality information, irrespective of published status.

To conclude, the current review aimed to explore what meta-analyses tell us about the prevalence of CSA and the potential sources of heterogeneity across prevalence studies. The review is limited in terms of being able to provide definitive answers due to the considerable heterogeneity within and between included meta-analyses. What is clear, however, is that CSA is highly prevalent worldwide and there are significant methodological difficulties when assessing prevalence, which in itself is revealing. No one moderating factor can fully account for the variation in prevalence. Differences between studies include variation in definitions and the use of non-validated assessment tools of CSA and lack of consistent reporting and dissemination of findings. Further essential research requires strict attention to

uniform definitions, standardised measures and greater transparent of reporting and regular systematic reviews are required.

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Table 1 summarises the key characteristics of the studies included in the review

Author and Year	Aim	Study population	Inclusion criteria	Moderator Variables coded
1. Peng et al., 2013	Meta-analysis on published findings related to child sexual abuse to reveal its actual rate of occurrence in China and its severity so to provide references for prevention and intervention purposes.	Chinese (n = 15) Children and adults	Observational CSA studies (2000- 2013): (a) Participants from Mainland China, retrospective study; (b) CSA defined; (c) Clear research; (d) Report total CSA occurrence (not limited to certain subcategories of CSA); (e) Report sample and number of CSA occurrences or numbers can be calculated from information provided	Title, year of publication, authors, place of research, type of research, start and end time of the research, participant data, definition of CSA, sample size, number of occurrence and the occurrence rate. Gender ratio.
2. Ji et al., 2013	Examine whether Chinese studies of child sexual abuse (CSA) in the general population show lower prevalence rates than other international studies, and whether certain features of these studies help account for variation in estimates.	Chinese (n = 27) Children and adults	a) published in peer-reviewed journal; (b) general population or students; (c) measured CSA before 18 yrs.; (d) not confined to sexual abuse within specific relationship dyads; (e) quantitative methods to estimate CSA prevalence in a female-only sample, male-only sample, or sample including males and females; (f) reported either prevalence of CSA for females or males.	**Study:** Author, year, Survey interview method, Chen's instrument, Mainland study, Urban/rural, location, Number of study sites. **Sample:** Gender, Age cohort, And total sample size, probability sample. **Prevalence:** total CSA contact CSA, penetrative CSA.
3. Stoltenborgh et al., 2011	Provide an estimate of the world-wide prevalence of CSA by integrating prevalence figures from a large body of research on CSA and its correlates	International (n=217) Children and adolescents Children and adults	Published between January 1980 and January 2008 and CSA prevalence reported (a) in terms of proportions at child level (excluding studies only reporting estimates of the family level) (b) for victims under the age of 18 years in (c) non-clinical samples,	**Sample:** Geographical area, time of assessment; level of economic development, ethnicity; age of respondent, gender distribution **Procedural:** Definition of CSA;

	aiming to reveal the extent of the problem and examine influence of geographical and sample characteristics and as procedural factors on the estimated CSA prevalence		and (d) if sufficient data were provided to determine this proportion as well as the sample size	Prevalence period; Age difference; Type of instrument; Instrument validated; Number of CSA questions; Respondent; Response rate; Sampling procedure; Sample size Evidence of maltreatment. Year and publication outlet
4. Barth et al., 2012	The aim of this study is to summarise the prevalence of CSA worldwide using the most current data.	International (n = 55) Children and adolescents	Empirical studies published after 2002 and data collected from 2000. Child and/or adolescent; Populations (below 18 years old).	**(a)** Region of study, development in region (HDI) (0 to 1) (b) study design, sampling method; number of CSA items; method of data collection. (c) Prevalence**:** type of CSA and gender.
5. Pereda et al., 2009b	To determine an overall international figure to illustrate the extent of this problem (2) to examine potential moderator variables that may influence prevalence rates.	International (n = 65) Children and adults	Papers published in scientific journals: a) main or secondary objective was to determine the prevalence of CSA; b) used non-clinical samples; c) reported the prevalence of CSA separately for men and women; and d) reported sufficient data to determine the corresponding prevalence and sample size.	Authors; b) year published; c) country; d) country's economic development e) continent of country f) gender; g) mean age h) type of sample I) area (local or national); j) sampling type; k) data collection method; l) definition of CSA
6. Bolen et al., 1999	Meta-analysis of all random prevalence studies using North American populations	North America (n = 22) Adults	Between January 1980 and January 2008.	Female and male prevalence, response rate, no. of screening questions, no of respondents, year reported, region, upper age of respondent, type of study, mode of administration, age differential, definition of abuse

Table 2 shows the agreed rating scores of study characteristics according to PRISMA

PRISMA item		Study first author					
		Barth et al., 2012	Bolen et al., 1999	Jai et al., 2013	Peng et al., 2013	Pereda et al., 2009	Stoltenborgh et al.,2011
1	Title	2	2	2	2	2	2
2	Structured summary	1	1	1	2	1	1
3	Rationale	2	2	2	1	2	2
4	Objectives	1	2	2	1	1	2
5	Protocol and registration	0	0	1	0	0	0
6	Eligibility criteria	1	1	1	1	1	1
7	Information sources	2	1	1	1	1	1
8	Search	1	1	1	1	1	1
9	Study selection	2	1	1	1	1	1
10	Data collection process	1	2	1	2	1	2
11	Data items	2	2	2	2	2	2
12	Risk of bias in individual studies	1	1	0	2	1	1
13	Summary measures	2	0	1	2	2	2
14	Synthesis of results	2	0	1	2	2	2
15	Risk of bias across studies	1	0	0	2	0	2
16	Additional analyses	2	0	2	2	1	1
17	Study selection	2	1	1	1	1	1
18	Study characteristics	2	2	1	2	2	2
19	Risk of bias within studies	0	0	0	2	0	0
20	Results of individual studies	2	1	2	2	1	2
21	Synthesis of results	2	1	2	2	2	2
22	Risk of bias across studies	0	0	0	2	0	1
23	Additional analyses	2	0	2	2	2	2
24	Summary of evidence	2	2	1	2	1	1
25	Limitations	2	1	1	2	1	1
26	Conclusions	2	2	2	2	2	2
27	Funding	0	0	1	0	1	1

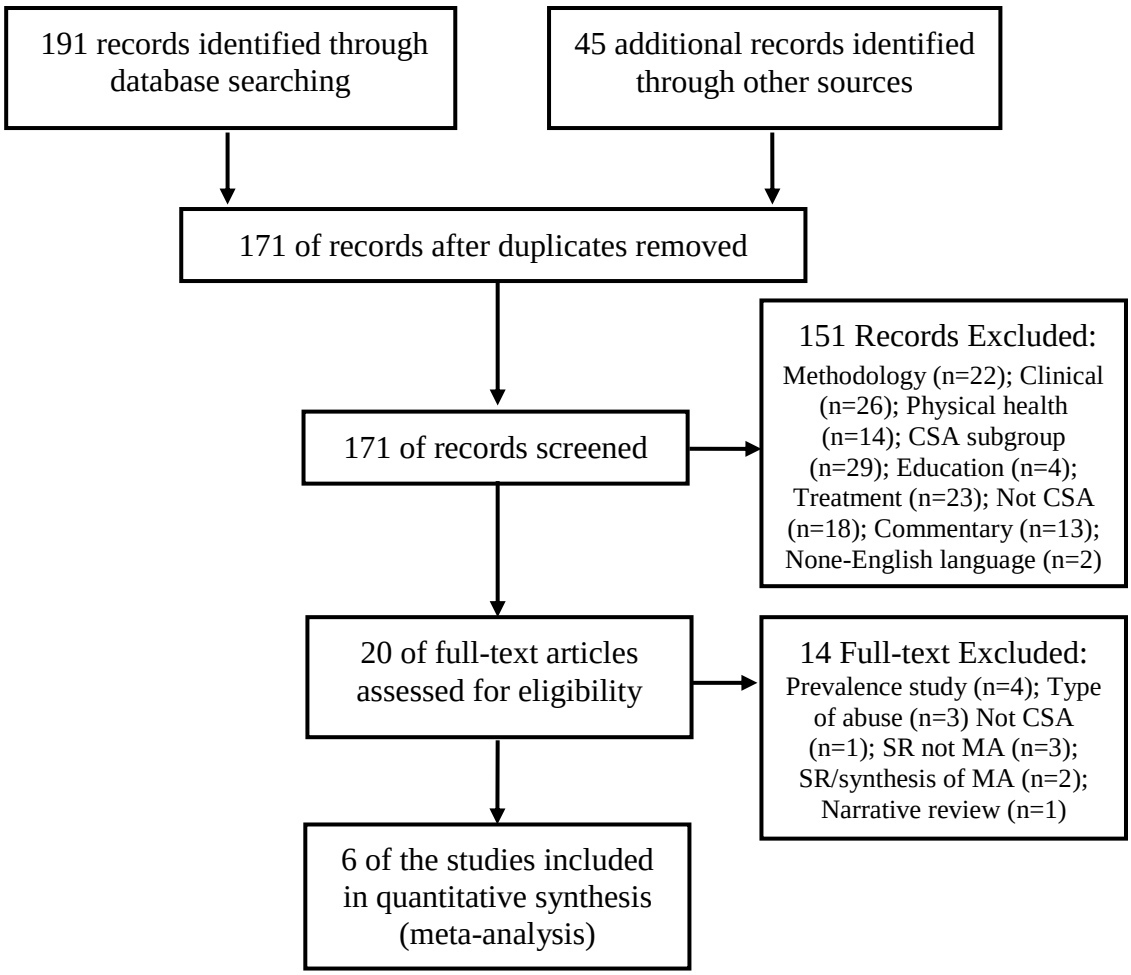

Figure 1. PRISMA flow diagram of record identification, screening, selection and inclusion through the systematic review (Moher, Liberati, Tetlaff, & Alteman, 2009)

Systematic Review Appendices

Appendix 1: Databases and additional sources searched

Table 1 shows the databases searched for relevant studies and key terms

Database	**Edition or date searched**	**Search Terms ††**
MEDLINE (Ovid Interface)	Ovid MEDLINE(R) 1946 to February Week 4 2014	prevalence (subject heading, explode) (keyword) child abuse, sexual (subject heading, explode) (child sexual abuse keyword) meta-analysis (subject heading, explode) (meta-analysis keyword)
PsycINFO (Ovid interface)	PsycINFO 1987 to February Week 4 2014	Search 1 prevalence (choose epidemiology as subject heading, major concept) Search 2 prevalence (keyword) Search 3 child sexual abuse (choose child abuse and sexual abuse, explode) Search 4 child sexual abuse (keyword) Search 5 meta-analysis (major concept) Search 6 meta analysis (keyword) Combine – Search 1 OR Search 2 (which will become Search 7), Search 3 OR Search 4 (which will become Search 8), Search 5 OR Search 6 (which will become Search 9) Then combine Search 7 AND Search 8 AND Search 9
WEB OF SCIENCE	1864 to February Week 4 2014	**TOPIC:** *(prevalence) AND* **TOPIC:** *(child sexual abuse) AND* **TOPIC:** *(meta analysis)* Timespan=All years.
PubMed - indexed for MEDLINE	28th February Week 4 2014	(("child abuse, sexual"[MeSH Terms] OR ("child"[All Fields] AND "abuse"[All Fields] AND "sexual"[All Fields]) OR "sexual child abuse"[All Fields] OR ("child"[All Fields] AND "sexual"[All Fields] AND "abuse"[All Fields]) OR "child sexual abuse"[All Fields]) AND ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms])) AND ("meta-analysis"[Publication Type] OR "meta-analysis as topic"[MeSH Terms] OR "meta-analysis"[All Fields])
Cochrane Databases	28th February Week 4 2014	#1 child sexual abuse:ti,ab,kw (Word variations have been searched) #2Enter terms for search prevalence #3Enter terms for search meta analysis

		#4 Enter terms for search #1 and #2 and #3
EMBASE (Ovid Interface)	EMBASE February Week 4 2014	prevalence (subject heading, explode) (keyword) child sexual abuse (subject heading, explode) (keyword) meta analysis (Embase would only allow a keyword search)
Science Direct	SCIENCE DIRECT 9th March Week 2 2014	Search 1 Child sexual abuse Search 2 Prevalence Search 3 Meta-analysis
International Bibliography of the Social Sciences (IBSS) (Proquest interface)	1951-2014, 28th February Week 4 2014	Set#: S3 Searched for: meta-analysis AND (child sexual abuse) AND prevalence Results: 1° Set#: S2 Searched for: a meta-analysis Set#: S1 Searched for: meta analysis of prevalence of child sexual abuse

Appendix 2: Email correspondence with authors of selected authors working in the field of child sexual abuse

E-mail sent to study authors where data was not required but to request for additional studies and information.

Hello […….]

My name is Christina Power and I am undertaking a systematic review of meta-analyses examining the prevalence of contact and non-contact child sexual abuse.

This is in part-fulfilment of a Doctorate in Clinical Psychology at Edinburgh University. Either: 1) Your paper: [.....] appears relevant
2) I am aware that you work in the field and I have accessed your website […….]/ or read your paper [……..].

I was wondering if you were aware of any unpublished/current/ in press meta-analyses which specifically examine the prevalence of child sexual abuse, which I may not have been able to find through a comprehensive searches of electronic databases.

I would really much appreciate it if you can provide any suggestions of any relevant studies that would be most helpful if you could get in contact.

Many thanks,
Christina Power
Trainee Clinical Psychologist/Specialist Psychological Practitioner

Appendix 2 continued

Table 2 shows the dates of authors contacted and the replies received

Author contacted	Paper title Email address	Date	Response date
Ali Zirakzadeh	Sexual Abuse and Lifetime Diagnosis of Psychiatric Disorders: Systematic Review and Meta-analysis zirakzadeh.ali@mayo.edu	8/3/14	No response
Astrid Lampe	The prevalence of childhood sexual abuse, physical abuse and emotional neglect in Europe. astrid.lampe@uibk.ac.at	7/3/14	No response
Bruce Rind	A meta-analytic review of findings from national samples on psychological correlates of child sexual abuse rind@vm.temple.edu	8/3/14	No response
Emily Douglas	Childhood sexual abuse fact sheet Emily.douglas@unh.edu	8/3/14	10/3/14
Frank Putnam	Ten-year research update Review: Child sexual abuse Frank.putnam@chmccorg.	8/3/14	No response
P Fusar-Poli	Prevalence of self-reported childhood abuse in psychosis: A meta-analysis of retrospective studies. p.fusar@libero.it	8/3/14	No response
John Leventhal	Epidemiology of sexual abuse of children: Old problems, new directions John.Leventhal@Yale.Edu	8/3/14	9/3/14

Jürgen Barth	The current prevalence of child sexual abuse worldwide: a systematic review and meta-analysis mail@juergen-barth.de	8/3/14	No response
Marinus H van Ijzendoorn	A Global Perspective on Child Sexual Abuse: Meta-Analysis of Prevalence Around the World vanijzen@fsw.leidenuniv.nl	8/3/14	8/3/14
Noemí Pereda	The prevalence of child sexual abuse in community and student samples: A meta-analysis npereda@ub.edu	8/3/14	10/3/14
Prof. Jim van Os	j.vanos@maastrichtuniversity.nl	8/3/14	8/3/14
Verena Schönbucher	Prevalence of child sexual abuse in Switzerland: a systematic review verena.schoenbucher@usz.ch	8/3/14	No response
Winfred Haeuser	Emotional, physical, and sexual abuse in fibromyalgia syndrome: A systematic review with Meta-Analysis. whaeuser@klinikum-saarbruecken.de	8/3/14	No response
Dong Xiaomei	Meta-analysis on the incidence rates of child sexual abuse in China (2013). ntydxm@126.com	7/3/14	8/3/14

Appendix 2 continued

Table 3 shows the responses to the e-mail requesting further information

Author or Organisation	Response
Dong Xiaomei	**From:** ntydxm@126.com [ntydxm@126.com] **Sent:** 08 March 2014 02:19 Dear Christina I'm very happy that our study can draw your attention, but it's a pity that we only have English abstract which you found, not the full text. As far as I know, China has almost no similar meta-analysis. Sorry! Good luck! Xiaomei Dong
Marinus IJzendoorn	**From:** VANIJEN@FSW.leidenuniv.nl **Sent:** 8 March 2014 11:24 See attached paper, marinus Marinus H. van IJzendoorn Centre for Child and Family Studies Institute of Education and Child Studies Graduate School of Social and Behavioural Sciences Leiden University, The Netherlands http://www.socialsciences.leiden.edu/educationandchildstudies/childandfamilystudies/organisation/staffcfs/van-ijzendoorn.html Center for Moral Socialization Studies School for Pedagogical and Educational Sciences Erasmus University Rotterdam The Netherlands
Jim van Os	**From:** vanosj@gmail.com **Sent:** 08 March 2014 12:27 sorry not as such - just in relation to psychosis 8 MAART: DE DSM-5 VOORBIJ - PERSOONLIJKE DIAGNOSTIEK IN EEN NIEUWE GGZ Prof. dr J. van Os Dept. Psychiatry and Psychology Maastricht University Medical Centre PO BOX 616 (location DOT12) 6200 MD Maastricht The Netherlands Email: vanosj@gmail.com
John Leventhal	**From:** john.leventhal@yale.edu **Sent:** 09 March 2014 19:04 Christina: there are several meta-analytic type reviews See Finkelhor at his website at the university of new Hampshire.

check out pubmed listings such as the one below. Dr. L.

The current prevalence of child sexual abuse worldwide: a systematic review and meta-analysis.
Barth J, Bermetz L, Heim E, Trelle S, Tonia T.
Int J Public Health. 2013 Jun;58(3):469-83. doi: 10.1007/s00038-012-0426-1. Epub 2012 Nov 21.
PMID:
23178922
[PubMed - in proces

Noemi Pereda **From:** npereda@ub.edu
Sent: 10 March 2014 09:12

Dear Christina,
There are only two meta-analyses conducted on the prevalence of child sexual abuse in community and student samples. You can find a good synthesis in the article by David Finkelhor I've attached to this e-mail.
Thank you,

Dra. Noemí Pereda
Prof. Titular de Victimologia
Grup de Recerca en Victimització Infantil i Adolescent (GReVIA)
Institut de Recerca en Cervell, Cognició i Conducta (IR3C)
www.ub.edu/grevia
Departament de Personalitat, Avaluació i Tractament Psicològics
Facultat de Psicologia
Universitat de Barcelona
Passeig Vall d'Hebron, 171
08035 Barcelona
Tel. 933125113
Fax. 934021362

Emily Douglas **From:** Emily.douglas@bridgew.edu
Sent: 10 March 2014 13:47

Hi, Christina.
Thanks for contacting me. I'm afraid that I cannot help you as child sexual abuse is not one of my main areas of expertise. I've only written a fact sheet on it with David Finkelhor and that was about 10 years ago.
Best of luck to you,
Emily

Dong Xiaomei **From:** ntydxm@126.com [ntydxm@126.com]
Sent: 12 March 2014

Hope it is helpful.
Good luck!
Dong

Appendix 3: Search strategy and reasons for exclusion

Table 4 shows publications excluded from electronic databases and additional sources search with reasons

Main reason for exclusion:

Study identified focussed on clinical aspects of CSA, including psychological and mental health correlates

Ackerman, P. T., Newton, J. E. O., McPherson, W. B., Jones, J. G., & Dykman, R. A. (1998). Prevalence of post traumatic stress disorder and other psychiatric diagnoses in three groups of abused children (sexual, physical, and both). *Child Abuse & Neglect, 22,* 759-774.

Arriola, K. R. J., Louden, T., Doldren, M. A., & Fortenberry, R. M. (2005). A meta-analysis of the relationship of child sexual abuse to HIV risk behaviour among women. *Child Abuse & Neglect, 29*, 725−746.

Briere, J., & Elliott, D. M. (2003). Prevalence and psychological sequelae of self-reported childhood physical and sexual abuse in a general population sample of men and women. *Child Abuse & Neglect, 27,* 1205-1222.

Brown, E. J. (2005). Correlates and treatment of stress disorder in children and adolescents. *Psychiatric Annals, 35*, 759-765.

Chen, L. P., Murad, M. H., & Paras, M. (2010). Sexual abuse and lifetime diagnosis of psychiatric disorders: Systematic review and meta-analysis. *Mayo Clinical Proceedings, 85,* 618-629.

Chen, L., Murad, M., Paras, M., Colbenson, K., Sattler, A., Goranson, E., & Zirakzadeh, A. (2010). Sexual abuse and lifetime diagnosis of psychiatric disorders: Systematic review and meta-analysis. *Mayo Clinic Proceedings, 85*, 618-629.

Ford, J. D., Fraleigh, L. A., Albert, D.B., & Connor, D. F. (2010). Child abuse and autonomic nervous system hyporesponsivity among psychiatrically impaired children. *Child Abuse & Neglect, 34*, 507-515.

Fossati, A., Madeddu, F., & Maffei, C. (1999). Borderline personality disorder and childhood sexual abuse: A meta-analytic study. *Journal of Personality Disorders, 13*, 68-80.

Hauser, M., Galling, B., & Correll, C. U. (2013). Suicidal ideation and suicide attempts in children and adolescents with bipolar disorder: a systematic review of prevalence and incidence rates, correlates, and targeted interventions. *Bipolar Disorders, 15*, 507-523.

Hillberg, T., Hamilton-Giachritsis, C., & Dixon, L. (2011). Review of meta-analyses on the association between child sexual abuse and adult mental health difficulties: A systematic approach. *Trauma Violence Abuse, 12*, 38-49.

Hovens, J. G. F. M., Wiersma, J. E., Giltay, E. J., van Oppen P., & Spinhoven P. M. (2010). Childhood life events and childhood trauma in adult patients with

depressive, anxiety and comorbid disorders vs. controls. *Acta Psychiatrica Scandinavica, 122,* 66-74.

Klonsky, E., & Moyer, A. (2008). Childhood sexual abuse and non-suicidal self-injury: Meta-analysis. *British Journal of Psychiatry, 192*, 166−170.

McLaughlin, K. A., Hatzenbuehler, M. L., Xuan, Z., & Conron, K. J. (2012). Disproportionate exposure to early-life adversity and sexual orientation disparities in psychiatric morbidity. *Child Abuse & Neglect, 36,* 645-655.

Nanni, V. U., Uher, R., & Danese, A. (2012). Childhood maltreatment predicts unfavorable course of illness and treatment outcome in depression: A meta-analysis. *The American Journal of Psychiatry, 169,* 141-151.

Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLoS Med, 9.*

Rind, B., & Tromovitch, P. (1997). A meta-analytic review of findings from national samples on psychological correlates of child sexual abuse. *Journal of Sex Research, 34,* 237-255.

Smolak, L., & Murnen, S. K. (2002). A meta-analytic examination of the relationship between child sexual abuse and eating disorders. *International Journal of Eating Disorders, 31,* 136-150.

Tolin, D., & Foa, E.B. (2006). Sex differences in trauma and posttraumatic stress disorder: A quantitative review of 25 years of research. *Psychological Bulletin, 132,* 959-992.

Wegman, H. L., & Stetler, C. (2009). A meta-analytic review of the effects of childhood abuse on medical outcomes in adulthood. *Psychosomatic Medication, 71,* 805-812.

Zhang T.H., Chow, A., Wang, L., Jun, H. Y., Yun, D. X l., Good, B. J., & Ze, P. X (2013). Childhood maltreatment profile in a clinical population in China: A further analysis with existing data of an epidemiologic survey. *Comprehensive Psychiatry, 54,* 856-864.

Main reason for exclusion: The study assessed CSA in subgroups, including forensic, psychosis and disability populations

Babchishin, K. M., Hanson, R. K., & Hermann, C. A. (2011). The characteristics of online sex offenders: A meta-analysis. *Sexual Abuse-A Journal of Research and Treatment, 23,* 92-123.

Banducci, A.N., Hoffman, E.M., Lejuez, C.W., & Koenen K.C. (2014). The impact of childhood abuse on inpatient substance users: Specific links with risky sex, aggression, and emotion dysregulation. *Child Abuse & Neglect,* In Press, Corrected Proof, Available online 9 February 2014.

Blain, L. M., Muench, F., Morgenstern, J., & Parsons, J. T. (2012) Exploring the role of child sexual abuse and posttraumatic stress disorder symptoms in gay and

bisexual men reporting compulsive sexual behavior. *Child Abuse & Neglect, 36*, 413-422.

Bonoldi, I., Simeone, E., & Rocchetti, M. (2013). Prevalence of self-reported childhood abuse in psychosis: A meta-analysis of retrospective studies. *Psychiatry Research, 210*, 8-15.

Fagan, P. J., Wise, T. N., & Schmidt, C. W. (2002). Pedophilia. *Journal of the American Medical Association, 288*, 2458-2465.

Gilson, K. J., & Lancaster, S. (2008). Childhood sexual abuse in pregnant and parenting adolescents. *Child Abuse & Neglect, 32*, 869-877.

Girardet, R. G., Lemme, S., Biason, T. A., Bolton K., & Lahoti, S. (2009) HIV post-exposure prophylaxis in children and adolescents presenting for reported sexual assault. *Child Abuse & Neglect, 33*, 173-178.

Goldstein, B. I., Shamseddeen, W., Axelson, D. A., Kalas, C., Monk, K., Brent, D. A., Kupfer,D. J., & Birmaher, K. (2010). Clinical, demographic, and familial correlates of bipolar spectrum disorders among offspring of parents with bipolar disorder. *Journal of the American Academy of Child & Adolescent Psychiatry, 49,* 388-396.

Govindshenoy, M., & Spencer, N. (2007). Abuse of the disabled child: A systematic review of population-based studies. *Child: Care, Health and Development, 33*, 552-558.

Heather, M., Gretton, R. J., & Clift, W. (2011). The mental health needs of incarcerated youth in British Columbia, Canada. *International Journal of Law and Psychiatry, 34*, 109-115.

Helton, J. J., & Liechty, J. M. (2014). Obesity prevalence among youth investigated for maltreatment in the United States. *Child Abuse & Neglect, 38,* 768-775.

Jespersen, A. F., Lalumiere, M., & Seto, M. C. (2009). Sexual abuse history among adult sex offenders and non-sex offenders: A meta-analysis. *Child Abuse & Neglect, 33*, 179-192.

Johnson, R. J., Ross, M. W, Taylor, W. C., Williams, M. L., Carvajal, R. I., & Peters R. J. (2006) Prevalence of childhood sexual abuse among incarcerated males in county jail. *Child Abuse & Neglect, 30*, 75-86.

Jones, L., Bellis, M., & Wood, S. (2012). Prevalence and risk of violence against children with disabilities: A systematic review and meta-analysis of observational studies. *Lancet, 380*, 899-907.

Långström, N., Enebrink, P., Laurén, E. M., Lindblom, J., Werkö, S., & Hanson, R. K. (2013). Preventing sexual abusers of children from reoffending: systematic review of medical and psychological interventions. *British Medical Journal, 9*, 347.

Leo, J. (2002). Apologists for pediphilia. *United States News World Report, 32*, 53.

Lund, E. M., & Vaughn-Jensen, J. E. (2012). Victimisation of children with disabilities. *The Lancet, 380*, 867-869.

Maddick, A. F., Feld, A., & Laurent, S. (2013). Safeguarding children in osteopathic practice: Part 1: Identifying children at risk. *International Journal of Osteopathic Medicine*, In Press, Corrected Proof, Available online 16 November 2013.

Maniglio, R. (2013). Prevalence of child sexual abuse among adults and youths with bipolar disorder: A systematic review. *Clinical Psychology Review, 33*, 561-573.

Matheson, S. L., Shepherd, A. M., Pinchbeck, R. M., Laurens, K. R., & Carr, V. J. (2013). Childhood adversity in schizophrenia: A systematic meta-analysis. *Psychological Medicine, 43*, 25-38.

Morantz, G., Cole, D. C., Ayaya, S., Ayuku, D., & Braitstein, P. (2013). Maltreatment experiences and associated factors prior to admission to residential care: A sample of institutionalized children and youth in western Kenya. *Child Abuse & Neglect, 37*, 778-787.

Schaefer, G. A., Mundt, I. A., Feelgood, S., Hupp, E., Neutze, J., Ahlers, C .J., Goecker, D., & Beier, K. M. (2010). Potential and Dunkelfeld offenders: Two neglected target groups for prevention of child sexual abuse. *International Journal of Law and Psychiatry, 33*, 154-163.

Seto, M. C., Hanson, R. K., & Babchishin, K. M. (2011). Contact sexual offending by men with online sexual offenses. *Sexual Abuse, 23*, 124-145.

Turner, D., Rettenberger, M., Lohmann, L., Eher, R., & Briken, P. (2014). Pedophilic sexual interests and psychopathy in child sexual abusers working with children. *Child Abuse & Neglect, 38*, 326-335.

Van der Put, C. E. (2013). The prevalence of risk factors for general recidivism in female adolescent sexual offenders: A comparison of three subgroups. *Child Abuse & Neglect, 37*, 691-697.

Varese, F., Smeets, F., Drukker, M., Lieverse, R., Lataster, T., Viechtbauer W., Read, J., Van Os, J., & Bentall, R. P. (2012). Childhood adversities increase the risk of psychosis: A meta-analysis of patient-control, prospective-and cross-sectional cohort studies. *Schizophrenia Bulletin, 38*, 661-671.

Zinzow, H. M., Grubaugh, A. L., Frueh, B. C., & Magruder K. M. (2008). Sexual assault, mental health, and service use among male and female veterans seen in Veterans Affairs primary care clinics: A multi-site study. *Psychiatry Research, 159*, 226-236.

Main reason for exclusion: Studies focussed on CSA related to physical health

Golding, J. M. (1999). Sexual assault history and headache: Five general population studies. *Journal of Nervous Mental Disorders, 187*, 624-629.

Golding, J. M., Cooper, M. L., & George, L. K. (1997). Sexual assault history and

health perceptions: Seven general population studies. *Health Psychology, 16*, 417-25.

Hamelin, C., Salomon, C., Cyr, D., Gueguen, A., & Lert, F. (2010). Childhood sexual abuse and adult sexual health among indigenous Kanak women and non-Kanak women of New Caledonia. *Child Abuse & Neglect, 34*, 677-688.

Häuser, W., Kosseva, M., Üceyler, N., Klose, P., & Sommer, C. (2011). Emotional, physical, and sexual abuse in fibromyalgia syndrome: a systematic review with meta-analysis. *Arthritis Care, 63*, 808-820.

Homma, Y., Wang, N., Saewyc, E. & Kishor, N. (2012). The relationship between sexual abuse and risky sexual behaviour among adolescent boys: A meta-analysis. *Journal of Adolescent Health, 51*, 18-24.

Irish, L., Kobayashi, I., & Delahanty, D. L. (2010). Long-term physical health consequences of childhood sexual abuse: A meta-analytic review. *Journal of Paediatric Psychology, 35*, 450-461.

Kroener-Herwig, B. (2013). Pediatric headache: Associated psychosocial factors and psychological treatment. *Current Pain and Headache Reports, 17*, 338-350.

Lloyd S., & Operario, D. (2012). HIV risk among men who have sex with men who have experienced childhood sexual abuse: Systematic review and meta-analysis. *AIDS Education and Prevention, 24*, 228-241.

Maguire, S. A., Upadhyaya, M., Evans, A., Mann, M. K., Haroon, M. M., Tempest, V., & Kemp, A. M. (2013). A systematic review of abusive visceral injuries in childhood--Their range and recognition. *Child Abuse & Neglect, 37*, 30-45.

McGowan, L. P. A., Clark-Carter, D. D., & Pitts, M. K. (1998). Chronic pelvic pain: A metaanalytic review. *Psychology & Health, 13*, 937−951.

Meewise, M. L., Reitsma, J. B., De Vries, G. J., Gersons, B. P. R.,& Olff, M. (2007). Cortisol and post-traumatic stress disorder in adults: Systematic review and meta-analysis. *British Journal of Psychiatry, 191*, 367−392.

Sharpe, D., & Faye, C. (2006). Non-epileptic seizures and child sexual abuse: A critical review of the literature. *Clinical Psychology Review, 26*, 1020-1040.

Sonneveld, L. P., Brilleslijper-Kater, S. N., Benninga, M. A., Hoytema van Konijnenburg, E. M.,Sieswerda-Hoogendoorn, T., & Teeuw, A. H. (2013). Prevalence of child sexual abuse in pediatric patients with chronic abdominal pain. *Journal of Paediatric Gastroenterology and Nutrition, 56*, 475-480.

Syrjanen, S. (2010). Current concepts on human papillomavirus infections in children. *APMIS, 118*, 494-509.

Main reason for exclusion: The study was education based

Fellmeth, G. L., Heffernan, C., Nurse, J., Habibula, S., & Sethi, D. (2013). Educational and skills-based interventions for preventing relationship and dating violence in adolescents and young adults. *Cochrane Database Systematic Reviews,*

19, CD004534.

Fonagy, P. (2001). School based child sexual abuse prevention programmes are effective for improving prevention skills and knowledge. *Evidence Based Mental Health, 4*, 12.

Hallfors, D., Vevea, J. L., Iritani, B., Cho, H., Khatapoush, S., & Saxe, L. (2002). Truancy, grade point average, and sexual activity: a meta-analysis of risk indicators for youth substance use. *Journal of School Health, 72*, 205-11.

Rispens, J., Aleman, A., & Goudena, P. P. (1997). Prevention of child sexual abuse victimization: A meta-analysis of school programs. *Child Abuse & Neglect, 21*, 975−987.

Zwi, K. J., Woolfenden, S. R., & Wheeler, D. M. (2007). School-based education programmes for the prevention of child sexual abuse. *Cochrane Database of Systematic Reviews, 3*, CD004380.

Main reason for exclusion: The study was focussed on treatment, outcomes, and/or intervention

Beitchman, J. H., Zucker, K. J., Hood, J. E., daCosta, G. A., & Akman, D. (1991). A review of the short-term effects of child sexual abuse. *Child Abuse &Neglect, 15,* 537-556.

Corcoran, J., & Pillai, V. (2008). A meta-analysis of parent-involved treatment for child sexual abuse. *Research on Social Work Practice*, *18*, 453-464.

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Wong, W. C. W., Leung, P. W. S., Tang, C. S. K., Chen, W., Lee, A., & Ling, D. C. (2009). To unfold a hidden epidemic: Prevalence of child maltreatment and its health implications among high school students in Guangzhou, China. *Child Abuse & Neglect, 33,* 441-450.

Main reason for exclusion: Abstract and title not in English

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Zambon, M. P., Carvalho de Ávila, J., Michelle Marchi de Medeiros, M., Guglielminetti, R. & Marmo, D. B (2012). Violência doméstica contra crianças e adolescentes: Um desafio. *Revista da Associação Médica Brasileira, 58,* 465-471.

Table 5 shows studies included for full text review and the main reason for exclusion:

Studies included for full text review and the main reason for exclusion: Prevalence study

Chan K. L. (2011). Association between childhood sexual abuse and adult sexual victimization in a representative sample in Hong Kong Chinese. *Child Abuse & Neglect, 35,* 220-229.

Finkelhor, D., Ormrod, R. K., & Turner, H. A. J. (2009). The developmental epidemiology of childhood victimization. *Interpersonal Violence, 24,* 711–731.

Finkelhor, D., Shattuck, A., Turner, H. A., & Hamby, S. (2014). The lifetime prevalence of child sexual abuse and sexual assault assessed in late adolescence. *Journal of Adolescent Health Violence,* [ahead of print] 1-5.

Finkelhor, D., Turner, H., Ormrod, R., & Hamby, S. L. (2010) Trends in childhood: Violence and abuse exposure: evidence from 2 national surveys. *Archives of Pediatric Adolescent Medicine, 164,* 238–42.

Main reason for exclusion: Not child sexual abuse

Roodman, A. A., Clum, G. A., (2001). Revictimization rates and method variance: A meta-analysis. *Clinical Psychology Review, 21*, 183-204.

Main reason for exclusion: Assessing other abuse

Stoltenborgh, M., Bakermans-Kranenburg, M. J., van IJzendoorn, M. H. (2013). Cultural-geographical differences in the occurrence of child physical abuse? A meta-analysis of global prevalence. *International Journal of Psychology*, 48, 81-94.

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Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R. A., & Van Ijzendoorn, M. H. (2012). The universality of childhood emotional abuse: A meta-analysis of worldwide prevalence. *Journal of Aggression, Maltreatment and Trauma, 21,* 870-890.

Main reason for exclusion: Systematic review without meta-analysis and narrative review

Andrews, G., Corry, J., Slade, T., Issakidis, C., Swanston, H. (2004). Child sexual abuse. In M. Ezzati, D. Lopez, A. Rodgers & C. J. L. Murray (Eds.), *Comparative quantification of health risks, vol 2* (pp. 1850–1940). World Health Organization, Geneva.

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sectional study among Swiss adolescents. *Journal of Adolescent Health, 54,* 304-311.

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Pereda, N., Guilera, G., Forns, M., & Gómez-Benito J. (2009).The international epidemiology of child sexual abuse: A continuation of Finkelhor (1994). *Child Abuse & Neglect, 33,* 331-342.

Gorey, K. M., & Leslie, D. R. (1997). The prevalence of child sexual abuse: Integrative review adjustment for potential response and measurement biases. *Child Abuse & Neglect, 21,* 391-398.

Table 6 shows the studies included for full text review

Final included studies

Barth, J., Bermetz, L., Heim, E., Trelle, S., & Tonia, T. (2012). The current prevalence of child sexual abuse worldwide: A systematic review and meta-analysis. *International Journal of Public Health, 58,* 469-483.

Bolen, R. M., & Scannapieco, M. (1999). Prevalence of child sexual abuse: A corrective metanalysis. *Social Service Review, 73,* 281-313.

Ji, K., Finkelhor, D., & Dunne, M. (2012). Child sexual abuse in China: A meta-analysis of 27 studies. *Child Abuse & Neglect, 37,* 613-622.

Peng, L., Zhang, S. H., Yang, J., Li, Y. , Ye, Y. F., Dong, X. M., ... Zhi, Z. (2013). Meta-analysis on the incidence rates of child sexual abuse in China. *Chinese Journal of Epidemiology, 34,* 1245-1249.

Pereda, N. G., Forns, G., & Gómez-Benito, M. J. (2009). The prevalence of child sexual abuse in community and student samples: A meta-analysis. *Clinical Psychology Review,* 29, 328-338.

Stoltenborgh, M., van Ijzendoorn, M. H., & Euser, E. M. (2011). A global perspective on child sexual abuse: Meta-analysis of prevalence around the world. *Child Maltreatment, 16,* 79-101.

Appendix 4: Bibliographic and descriptive data extracted from included studies

Table 7 shows the descriptive information extracted from the included studies

First author and year of publication	Title	Number. of Studies	Number of countries	Aim	Study population
Peng et al., 2013	Meta-analysis on the incidence rates of child sexual abuse in China	16	China	Meta-analysis on published findings related to child sexual abuse in order to reveal its actual rate of occurrence in our country and its severity so to provide references for prevention and intervention purposes.	Children and adults
Ji et al., 2013	Child sexual abuse in China: A meta-analysis of 27 studies	27	China	Examine whether Chinese studies of child sexual abuse (CSA) in the general population show lower prevalence rates than other international studies, and whether certain features of these studies may help to account for variation in estimates.	Children and adults
Stoltenborgh et al., 2011	A Global Perspective on Child Sexual Abuse: Meta-Analysis of Prevalence Around the World	217	International	To provide an estimate of the world-wide prevalence of CSA by integrating prevalence figures from a large body of research on CSA and its correlates aiming to reveal the extent of the problem and to examine the influence of geographical and sample characteristics as well as procedural factors on the estimated prevalence of CSA.	Children and adult (SRS and informant studies)
Barth et al., 2012	Current prevalence of child sexual abuse worldwide: a systematic review and meta-analysis	55	International	The aim of this study is to summarize the prevalence of CSA worldwide using the most current data.	Children and adolescents
Pereda et al 2009b	The prevalence of child sexual abuse in community and student samples: A meta-analysis	65	International	A meta-analysis of prevalence studies to determine an overall international figure that is able to illustrate the extent of this problem; and to examine the potential moderator variables that may be influencing this prevalence rate.	Children and adult samples
Bolen et al., 1999	Prevalence of Child Sexual Abuse: A corrective meta-analysis	22	North American	Purpose to perform a meta-analysis of all random prevalence studies using North American populations	Adults

Appendix 4 continued

Table 8 shows the methodological aspects of each included study

Author, year of publication	Inclusion criteria	Exclusion criteria	Search strategy	Variables coded
Peng et al., 2013	Publications 2000- 2013; Observational studies of incidence rate of CSA: (1) Sample from Mainland China, retrospective study; (2) CSA has to be defined in the article; (3) Type of research and research methods are clear and similar; (4) Report total rate of CSA, not limited to certain CSA subcategories; (5) Report sample size and number of occurrences of child abuse or numbers can be calculated from the information provided in the study.	(1) Unique sample not representative of the general population, (data from hospitals or the recorded from the public security, department; (2) Information that is incomplete, unclear or includes errors; (3) Duplicated publications, duplicated compilation or articles that use similar data.	(1) Electronic databases: PubMed, Springer Link, Elsevier-SDOL. Chinese Biomedical Database (CBM), China National Knowledge Infrastructure (CNKI), Chinese Science &Technology journal database(VIP), Wanfang Databases, China master's Theses Full-text Database and China Conference Papers Full—text Databases	Title, year of publication, authors, place of research, type of research, start and end time of the research, participant data, definition of CSA, sample size, number of occurrence and the occurrence rate. Gender ratio.
Ji et al., 2013	(1) published in peer-reviewed journal; (2) general population (residents or students; (3) CSA measured before 18 years; (4) not confined to sexual abuse only within specific relationship dyads (e.g., parent-child); (5) quantitative methods to estimate the prevalence of CSA in a female-only sample, male-only sample, or sample including both male female respondents; (6) reported either CSA prevalence for females/ males	Report that did not stratify data by gender	(1) Electronic databases; (2) checking references that were listed in systematic reviews of CSA in China; (3) contacting authors of CSA surveys or review papers.	First Author, year published, Survey interview method, Chen's instrument, Mainland study, Urban/rural, location, Number of study sites. Gender, Age cohort, Total sample size, Probability sample. Total CSA, contact CSA, and penetrative CSA.
Stoltenborgh et al., 2011	(1) Published between January 1980 and January 2008; (2) CSA prevalence reported (a) in terms of proportions at child level (excluding studies only reporting estimates of the family level) (b) for victims under the age of 18 years in (c) nonclinical samples, and (d)	Not explicitly reported	(1) Electronic databases: PubMed, Online Contents, Picarta, ERIC, PsycInfo, Web of Science; (2) Search of specialized journals Child Abuse and Neglect and Child	Geographical origin, economic development of country, predominant ethnicity; age of respondent at assessment; gender distribution in sample Definition of abuse, prevalence period, age

	if sufficient data were provided to determine this proportion as well as the sample size .		Maltreatment; (3) References of articles, dissertations, chapters searched for relevant studies.	difference, instrument and validation, number of CSA questions; response rate, Sampling procedure, size. Evidence maltreatment. Year and outlet of publication.
Barth et al., 2012	(1) Empirical studies published after 2002; (2) data collected from 2000. Child and/or adolescent Populations (below 18 years old).	(1) Case studies and studies for which the country was unknown; (2) sample size below 1,000 (to exclude studies with low statistical precision and low reporting quality (3) unpublished reports were not included.	**(**1) Electronic databases: Embase, Medline, PsycInfo and psyndex; (2) Consulted 75 experts on CSA from 75 different countries; (3) Grey literature	Region of study, country economic development (HDI) Study design; sampling method, number of items to assess CSA, method of data collection. Prevalence rates stratified across CSA type and gender.
Pereda et al., 2009b	Papers published in scientific journals and which met the following inclusion criteria: (1) their main or secondary objective was to determine the prevalence of CSA; (2) used non-clinical samples; (3) reported the prevalence of CSA separately for men and women; and (4) reported sufficient data to determine the corresponding prevalence and sample size	Not explicitly reported	(1) Electronic databases Psycinfo, Medline, and Science Citation Index and Social Sciences Citation Index of the Web of Science; (2) hand search of documents published in specialist journals in the field; (3) reference lists of other reviews about the prevalence of child sexual abuse in non-clinical populations; (4) contact authors where necessary.	Authors, year of publication, study country, country's economic development, continent, gender distribution, mean age of participants; sample (general or students), area (local or national), type of sampling; data collection method, CSA definition; Prevalence, sample, size.
Bolen et al., 1999	Between January 1980 and January 2008.	Did not define population; or analysed only interfamilial abuse; only sampled adolescents	(1) Electronic databases PubMed, Online Contents, Picarta, ERIC, PsycInfo, and Web of Science; (2) Hand search specialized journals Child Abuse and Neglect; (3) Search reference list of the collected articles, dissertations, book chapters reviews and meta-analyses of CSA	Authors, prevalence of CSA, number of males and female respondents. Response rate, year in which the survey was reported, mode of administration, number of screening questions, type of survey, region, level of contact, age differential between perpetrator and victim, and age of respondent.

Appendix 5: Quality Assessment Criteria

Table 9 shows an example of the PRISMA Checklist guidelines (Moher et al., 2009)

STUDY AUTHOR:
STUDY RATER

	Item No	Recommendation	Page	Notes	Score
Title and	1	Identify the report as a systematic review, meta-analysis, or both.			
Abstract	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.			
Introduction					
Rationale	3	Describe the rationale for the review in the context of what is already known			
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).			
Methods					
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number			
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.			
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched			
Search	8	Present full electronic search strategy for at least one database, including any limits			

		used, such that it could be repeated
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis.
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.
Results		
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.
Synthesis of	21	Present results of each meta-analysis done, including confidence intervals and

results		measures of consistency.
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).
Additional analyses	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).
Discussion		
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.
Funding		
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097doi:10.1371/journal.pmed1000097

For more information, visit: **www.prisma-statement.org**.

Appendix 6: Evaluation of methodological quality of the studies and risk of bias

Table 10 shows the final ratings agreed by independent rater 1 and 2 for each included study

Title	PRISMA item	Barth et al., 2012	Bolen et al., 1999	Ji et al., 2013	Peng et al., 2013	Pereda et al., 2009	Stoltenborgh et al., 2011
1	Title	2	2	2	2	2	2
Abstract							
2	Structured summary	1	1	1	2	1	1
Introduction							
3	Rationale	2	2	2	1	2	2
4	Objectives	1	2	2	1	1	2
Methods							
5	Protocol and registration	0	0	1	0	0	0
6	Eligibility criteria	1	1	1	1	1	1
7	Information sources	2	1	1	1	1	1
8	Search	1	1	1	1	1	1
9	Study selection	2	1	1	1	1	1
10	Data collection process	1	2	1	2	1	2
11	Data items	2	2	2	2	2	2
12	Risk of bias in individual studies	1	1	0	2	1	1
13	Summary measures	2	0	1	2	2	2
14	Synthesis of results	2	0	1	2	2	2
15	Risk of bias across studies	1	0	0	2	0	2
16	Additional analyses	2	0	2	2	1	1
Results							
17	Study selection	2	1	1	1	1	1
18	Study characteristics	2	2	1	2	2	2

19	Risk of bias within studies	0	0	0	2	0	0
20	Results of individual studies	2	1	2	2	1	2
21	Synthesis of results	2	1	2	2	2	2
22	Risk of bias across studies	0	0	0	1	0	1
23	Additional analyses	2	0	2	2	2	2
Discussion							
24	Summary of evidence	2	2	1	2	1	1
25	Limitations	2	1	1	2	1	1
26	Conclusions	2	2	2	2	2	1
Funding							
27	Funding	0	0	1	2	1	1

Appendix 6: Evaluation of methodological quality of the studies and risk of bias

Table 11 shows the independent and agreed rating scores on each PRISMA item for each meta-analysis

		Barth et al., 2012			Bolen et al., 1999			Ji et al., 2013		
	PRISMA item	Rater 1	Rater 2	Agreed	Rater 1	Rater 2	Agreed	Rater 1	Rater 2	Agreed
Title										
1	Title	2	2	2	2	2	2	2	2	2
Abstract										
2	Structured summary	1	1	1	1	1	1	1	1	1
Introduction										
3	Rationale	1	2	2	2	2	2	2	2	2
4	Objectives	2	1	1	0	0	2	2	2	2
Methods										
5	Protocol and registration	0	0	0	0	0	0	0	1	1
6	Eligibility criteria	1	1	1	1	2	1	1	1	1
7	Information sources	1	2	2	1	1	1	1	1	1
8	Search	1	1	1	1	1	1	1	1	1
9	Study selection	1	2	2	1	1	1	1	1	1
10	Data collection process	1	1	1	2	2	2	1	1	1
11	Data items	2	2	2	2	2	2	2	2	2
12	Risk of bias in individual studies	1	1	1	1	1	1	0	0	0
13	Summary measures	2	2	2	0	0	0	1	1	1
14	Synthesis of results	2	2	2	0	0	0	1	1	1
15	Risk of bias across studies	0	1	1	0	0	0	0	0	0
16	Additional analyses	2	2	2	0	0	0	2	2	2

Results										
17	Study selection	2	2	2	1	1	1	1	1	1
18	Study characteristics	2	2	2	2	2	2	1	1	1
19	Risk of bias within studies	0	0	0	0	0	0	0	0	0
20	Results of individual studies	2	2	2	1	1	1	2	2	2
21	Synthesis of results	2	2	2	1	1	1	2	2	2
22	Risk of bias across studies	0	0	0	0	0	0	0	0	0
23	Additional analyses	2	2	2	0	0	0	2	2	2
Discussion										
24	Summary of evidence	2	2	2	2	2	2	1	1	1
25	Limitations	2	2	2	1	1	1	1	1	1
26	Conclusions	2	2	2	2	2	2	2	2	2
Funding										
27	Funding	0	0	0	0	0	0	1	1	1

Appendix 6

Table 11 (continued) shows the independent and agreed rating scores on each PRISMA item for each meta-analysis

		Peng et al., 2013			Pereda et al., 2009			Stoltenborgh et al., 2011		
	PRISMA item	Rater 1	Rater 2	Agreed	Rater 1	Rater 2	Agreed	Rater 1	Rater 2	Agreed
Title										
1	Title	2	2	2	2	2	2	2	2	2
Abstract										
2	Structured summary	1	2	2	1	1	1	1	1	1
Introduction										
3	Rationale	1	1	1	2	1	2	2	2	2
4	Objectives	1	1	1	1	1	1	2	2	2
Methods										
5	Protocol and registration	0	0	0	0	0	0	0	0	0
6	Eligibility criteria	1	1	1	1	1	1	1	1	1
7	Information sources	1	1	1	1	1	1	1	1	1
8	Search	1	2	1	1	1	1	1	1	1
9	Study selection	1	2	1	1	1	1	0	1	1
10	Data collection process	2	2	2	1	1	1	2	2	2
11	Data items	2	2	2	2	2	2	2	2	2
12	Risk of bias in individual studies	2	2	2	1	1	1	1	1	1
13	Summary measures	2	2	2	2	2	2	1	2	2
14	Synthesis of results	2	2	2	2	2	2	2	2	2
15	Risk of bias across studies	2	2	2	0	0	0	2	2	2
16	Additional analyses	2	2	2	1	1	1	1	1	1

Results										
17	Study selection	0	1	1	1	1	1	1	1	1
18	Study characteristics	2	2	2	2	2	2	2	2	2
19	Risk of bias within studies	2	2	2	0	0	0	0	0	0
20	Results of individual studies	2	2	2	1	2	1	2	2	2
21	Synthesis of results	2	2	2	2	2	2	2	2	2
22	Risk of bias across studies	0	2	1	0	0	0	1	1	1
23	Additional analyses	1	2	2	2	2	2	2	2	2
Discussion2										
242	Summary of evidence	1	2	2	1	1	1	1	1	1
252	Limitations	2	2	2	1	1	1	1	1	1
26	Conclusions	2	2	2	1	2	2	1	1	2
Funding										
27	Funding	0	0	0	1	1	1	1	1	1

Appendix 6

Table 12 shows the ratings and comments on each PRISMA item for Barth et al., 2012

STUDY AUTHOR: Barth, J., Bermetz, L., Heim, E., Trelle, S., & Tonia, T. (2012).
STUDY TITLE: The current prevalence of child sexual abuse worldwide: A systematic review and meta-analysis

PRISMA	Item No	Recommendation	Page	Notes	Score
Title and	1	Identify the report as a systematic review, meta-analysis, or both.	469	Fully met – identified both Fully met	2 2
Abstract	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	469	Data sources not specified. No explicit mention of data extraction	1 1
Introduction					
Rationale	3	Describe the rationale for the review in the context of what is already known	469/470	Clear rationale and what the current meta-analysis aims to contribute to the field. Sparse attention to consequences and why assessing the prevalence of CSA is important at individual and service level.	2 1
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	470	The questions are included but not explicitly addressing in terms of PICOS Fully met	1 2
Methods					

Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number	--	No clear reference to the protocol i.e. flowchart PRISMA. No registration number, or methods of analysis and inclusion criteria.	0 0
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	470	Years considered not included (although this is mentioned in the abstract). Eligibility criteria reported, but not all with rationale.	1 1
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	470	Search started in February but the end date of the search not stated clearly. Did not report who developed or conducted the search.	2 1
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated	470	Did not specify the dates the search was conducted; no mention of hand searching of journals, checking reference lists – but did mention that unpublished reports not included. No mention of specific limits to the search or report whether the search strategy was peer reviewed. Stated it did	1 1

				not include grey literature but not the reasons for this.	
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	470&480	Fully met Partially met, does not state how agreement was achieved between raters' or inter-rater agreement.	2 1
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	470/471	Does not mention contacting researchers to seek additional information or description of method for resolving disagreement. Mentioned duplicate publications. Stated the type of data extracted from studies but did not refer to data extraction form, (piloted), who extracted the data, whether completed in duplicate, or resolving disagreement	1 1
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made	470/471	Fully met Fully met	2 2
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	470/471	Partially present - To explore variability in study results (heterogeneity) Not made explicit that they were	1 1

				addressing risk of bias in individual studies- did not mention using a risk of bias tool.	
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	471	Fully met Fully met	2 2
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis.	471	Fully met Fully met	2 2
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	---	Not present - No specific reference to formal assessment of bias across studies – missing data - not clear	0 1
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	471	Mentions meta-regression Mention homogeneity test analysis of moderators and meta regression – could be more detailed	2 2
Results					
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	471/480	Good flowchart Fully met	2 2
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations	471-474	Fully met Fully met	2 2
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	--	Not present No clear reference to tool assessing risk of bias	0 0
Results of individual	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence	476-477	Fully met Fully met	2 2

studies		intervals, ideally with a forest plot.			
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	476-477	Fully met Fully met	2 2
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	477	Not present Not present	0 0
Additional analyses	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	477	Fully met Fully met	2 2
Discussion					
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	477/478	Fully met Fully met	2 2
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	478/479	Fully met Fully met	2 2
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	479	Fully met Fully met	2 2
Funding					
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	--	Declares no conflict of interest (p. 479), but does not mention funding.	0 0

Appendix 6

Table 13 shows the ratings and comments on each PRISMA item for Bolen & Scannapieco (1999)

STUDY AUTHOR: Bolen, R. M., & Scannapieco, M. (1999).
STUDY TITLE: Prevalence of child sexual abuse: A corrective meta-analysis

PRISMA	Item No	Recommendation	Page	Notes	Score
Title	1	Identify the report as a systematic review, meta-analysis, or both.	281	Fully met	2
				Fully met	2
Abstract	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	281	Not clearly structured;	1
				Data sources, study selection and eligibility: not specified; No explicit mention of data extraction or limitations	1
Introduction					
Rationale	3	Describe the rationale for the review in the context of what is already known	281 – 282	Clear rationale, sets the scene well and identifies what the papers aims to contribute to the field.	2
					2
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	-	Not met – not explicit	0
				Not met – not explicit	0
Methods					
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number	-	Not met - does not indicate that a protocol exist or provide registration number	0
				Not met	0

Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	282 – 283, 286	Partially met – not explicitly mentioned language study and not clearly structured Fully met	1 2
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	282, 286	Partially met - authors did not identify the researchers who conducted the search or mention of date last search Partially met	1 1
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated	286	Partially met - did not state restrictors, who conducted search and no explicit mention of whether search strategy was peer reviewed? Partially met	1 1
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	286	Partially present – did not provide detailed information for the screening of studies, selection process or provide PRISMA flowchart or inter-rater agreement/consensus. Partially present	1 1
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	282, 286	Fully met Fully met	2 2

Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made	286 - 289	Fully met Fully met	2 2
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	283 - 286	Partially met – did not report how they assessed risk of bias or calibration exercises Partially met	1 1
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	-	Not met – not stated in the method what the principle summary measure is Not met	0 0
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis.	-	Not met Not met	0 0
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	-	Not met Not met	0 0
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	-	Not met Not met	0 0
Results					
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	282, 283, 286	Partially met – total number identified and screened not included and no flowchart and not discussed reasons for exclusion at each stage Partially met	1 1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations	286 - 289	Fully met Fully met (but covered in methods section also)	2 2

Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	-	Not present Not present	0 0
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	290, 291, 292	Partially met – no forest plot Partially met	1 1
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	305 – 308, 290-292	Partially met – no explicit Confidence Intervals or measures of consistency provided Partially met	1 1
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	-	Not present Not present	0 0
Additional analyses	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	-	Not present Not present	0 0
Discussion					
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	293 - 301	Fully met Fully met	2 2
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	296, 297, 298,	Partially met Partially met – not discussed specific bias e.g. publication bias and whether assessed	1 1
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	296, 299	Fully met Fully met	2 2
Funding					
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	-	Not met Not met	0 0

Appendix 6

Table 14 shows the ratings and comments on each PRISMA item for Ji et al., (2013)

STUDY AUTHOR: Ji, K., Finkelhor, D. & Dunne, M. (2013)
STUDY TITLE: Child sexual abuse in China: A meta-analysis of 27 studies

PRISMA	Item No	Recommendation	Page	Notes	Score
Title	1	Identify the report as a systematic review, meta-analysis, or both.	613	Fully met	2
				Fully met	2
Abstract	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	613	Partially met - Data sources not specified or explicit mention of data extraction or limitations	1
				Partially met	1
Introduction					
Rationale	3	Describe the rationale for the review in the context of what is already known	614	Fully met	2
				Fully met	2
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	614	Fully met	2
				Fully met	2
Methods					
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number		Not met	0
				Partially met –does not provide registration number, not explicit	1
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	615	Partially met – not explicitly mentioned language study and years	1
					1

				considered Partially met	
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	614 - 615	Partially met - authors did not identify the researchers who conducted the search or mention of date last search or dates of coverage Partially met	1 1
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated	614, 615	Partially met - did not state any restrictors or who conducted search Partially met	1 1
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	614, 615	Partially present – not provide PRISMA flowchart, eligibility or inter-rater agreement/consensus. Partially present	1 1
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	615	Partially met – do not mention duplicate publications Partially met	1 1
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made	615	Fully met Fully met	2 2
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	-	Not met Not met	0 0
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	615	Partially met – could be more explicit, although	1 1

				they do refer to pooled prevalence estimates Partially met	
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis.	615	Partially met – not explicitly evaluated between study variability Partially met	1 1
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	-	Not met Not met	0 0
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	615	Fully met Fully met	2 2
Results					
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	616	Partially met – total number identified and screened not included and no flowchart and not discussion of reasons for exclusion at each stage Partially met	1 1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations	621	Partially met – narrative summary of studies not addressed in the results section Partially met	1 1
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	-	Not present – not clear Not present	0 0
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	616 – 618	Fully met Fully met	2 2
Synthesis of	21	Present results of each meta-analysis done, including confidence intervals and	616 -	Fully met	2

results		measures of consistency.	618	Fully met	2
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	-	Not present Not present	0 0
Additional analyses	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	618	Fully met Fully met	2 2
Discussion					
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	618 - 620	Partially met – does not explicitly consider relevance to key groups Partially relevant	1 1
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	620	Partially met – not explicitly discussed bias e.g. publication bias and limitations at a study level Partially met	1 1
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	620	Fully met Fully met	2 2
Funding					
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	613	Partially met - does not state the role of the funders	1 1

Appendix 6

Table 15 shows the ratings and comments on each PRISMA item for Peng et al., (2013)

STUDY AUTHOR: Peng, L., Zhang, S. H., Yang, J., Li, Y. , Ye, Y. F., Dong, X. M., Wang, S. Y., Zhonghua, L. X. Bing, X., Zhi, Z. (2013)
STUDY TITLE: Meta-analysis on the incidence rates of child sexual abuse in China

PRISMA	Item No	Recommendation	Page*	Notes	Score
Title and	1	Identify the report as a systematic review, meta-analysis, or both.		Fully met	2
				Fully met	2
Abstract	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.		Met	2
				Fully met (although they do not mention funding)	1
Introduction					
Rationale	3	Describe the rationale for the review in the context of what is already known		Very brief, doesn't really highlight what the review aims to add to what is already known. Partial	1 1
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).		Some information on the questions is included but not explicitly addressing in terms of PICOS	1 1
Methods					
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number		No clear reference to the protocol i.e. flowchart PRISMA. No registration number	0 0

Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	Very good, but does not mention publication status (such as inclusion of unpublished material and abstracts). Partial, need more information	1 1
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	Does not include contact with study authors to identify additional studies) or date last searched. Lacking in certain areas	1 1
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated	Fully met Partially met. Could contain more detail regarding dates etc.	2 1
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	Fully met Could include more information in the review and analysis	2 1
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	Fully met Fully met	2 2
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made	Fully met Fully met	2 2
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	Loney criteria used Specified a measure	2 2
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	Total occurrence rate specified	2 2

Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency for each meta-analysis.	Fully met – sensitivity analysis used	2 2
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	Fully met Fully met	2 2
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	Mentions sensitivity analysis	2
Results				
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	No flowchart No flowchart	1 0
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations	Fully met Met criteria	2 2
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	Quality assessment score provided in table	2 2
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	Fully met Met criteria	2 2
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	Fully met Fully Met	2 2
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	Fully met Unclear	2 0
Additional analyses	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	Fully met Partially met criteria – more detail required	2 1
Discussion				
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	Fully met Partially met	2 1
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level	Fully met	2

		(e.g., incomplete retrieval of identified research, reporting bias).	Fully met	2
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	Fully met Fully met	2 2
Funding				
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	Not provided Not provided	0 0

Appendix 6

Table 16 shows the ratings and comments on each PRISMA item for Pereda et al., (2009b)

STUDY AUTHOR: Pereda, N., Guilera, G., Forns, M., & Gómez-Benito, J. (2009b).
STUDY TITLE: The prevalence of child sexual abuse in community and student samples: A meta-analysis

PRISMA	Item No	Recommendation	Page	Notes	Score
Title and	1	Identify the report as a systematic review, meta-analysis, or both.	328	Fully met	2
			328	Fully met	2
Abstract	2	Provide a structured summary including, as applicable: background; objectives; data	328	Data sources: A variety	1
		sources; study eligibility criteria, participants, and interventions; study appraisal and	328	of sources – not	1
		synthesis methods; results; limitations; conclusions and implications of key findings;		specified. Study selection	
		systematic review registration number.		and eligibility: Did not	
				specify eligibility criteria;	
				No explicit mention of	
				data extraction or pooled	
				participants. Conclusion	
				not informative	
Introduction					
Rationale	3	Describe the rationale for the review in the context of what is already known	329	Clear rationale and what	2
				the current meta-analysis	1
				aims to contribute to the	
			329	field. The rationale could	
				be more explicit	
Objectives	4	Provide an explicit statement of questions being addressed with reference to	329	The questions are	1
		participants, interventions, comparisons, outcomes, and study design (PICOS).	329	included but not	1
				explicitly addressing in	
				terms of PICOS	

Methods					
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number	330	No clear reference to the protocol i.e. flowchart PRISMA. None and no registration number	0 0
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	330	Years considered not included, so not clear what the parameters are of the studies included.	1 1
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	330	Not mentioned dates of coverage and date last searched.	1 1
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated	330	Did not specify the dates the search was conducted; did not state whether search strategy was peer reviewed.	1 1
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	330	Partially met, does not state how agreement was achieved between rater's or effort to reach consensus or level of inter-rater agreement.	1 1
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	330	Not included or made explicit. Methods not present but description of resolving disagreement was partially present	1 1
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made	330	Fully met Fully met	2 2

Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	330	Partially present Partially present	1 1
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	330	Fully met Fully met	2 2
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis.	330	Fully met Fully met	2 2
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	330	Not present Not present	0 0
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.		Not discussed or clear but does mention homogeneity test and analysis of moderators	1 1
Results					
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	331	Partially met – total number identified and screened not include and no flowchart Partially met	1 1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations	331	Fully met Fully met	2 2
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	331	Not present Not present	0 0
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	333	Partially met – not included a forest plot Fully met	1 2
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	333	Fully met Fully met	2 2
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	-	Not present Not present	0 0

Additional analyses	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).		Partially present Partially present	2 2
Discussion					
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	334 - 335	Partial consider relevant to all potential stakeholders Not to key groups	1 1
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	336	Partially met Partially met – not discussed the limitations of the review process	1 1
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	336	Partially met – recommendations could be more specific Fully met	1 2
Funding					
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	328	Mentions but does not state what the role of the funders for the review	1 1

Appendix 6

Table 17 shows the ratings and comments on each PRISMA item for Stoltenborgh et al. (2011)

STUDY AUTHOR: Stoltenborgh M, van Ijzendoorn, M. H., Euser, E. M., Bakermans-Kranenburg, M. J. (2011).
STUDY TITLE: A global perspective on child sexual abuse: Meta-analysis of prevalence around the world

PRISMA	Item No	Recommendation	Page	Notes	Score
Title and	1	Identify the report as a systematic review, meta-analysis, or both.	79	Fully met Fully met	2 2
Abstract	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	79	Not clearly structured Data sources: not specified. Study selection and eligibility: Did not specify eligibility criteria; No explicit mention of data extraction.	1 1
Introduction					
Rationale	3	Describe the rationale for the review in the context of what is already known	79	Clear rationale and what the current meta-analysis aims to contribute to the field. Also explained that it replicated a previous meta-analysis	2 2
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	81	Fully addressed Fully addressed	2 2
Methods					
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration	-	Does not indicate that a protocol exist or provide	0 0

		number		registration number	
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	81-82	Not reported characteristics i.e. language	1 1
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	81-82	Authors did not identify the researchers who conducted the search or mentioned of date last searched; or contact with study authors.	1 1
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated	82-83	Did not explicit mention limiters or restrictions or whether search strategy was peer reviewed.	1 1
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	82-83	Not clear present Partially present – did not provide detailed information for the screening of studies or provide PRISMA flowchart of process	0 1
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	83	Fully met Fully met	2 2
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made	82	Fully met Fully met	2 2
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	84	Partially met – could be more explicit Partially met	1 1
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	84	Partially met – not explicit	1 2

				Fully met – mentions effect sizes and standard errors	
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis.	83	Fully met Fully met	2 2
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).		Fully met Fully met	2 2
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.		Not clear but does mention homogeneity test and analysis of moderators	1 1
Results					
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.		Partially met – total number identified and screened not include and no flowchart and not discussed reasons for exclusion at each stage.	1 1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations		Fully met Fully met	2 2
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).		Not present Not present	0 0
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.		Fully met Fully met	2 2
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.		Fully met Fully met	2 2
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).		Partially met Partially met – more detail required (specify	1 1

			effect estimate and precision used)	
Additional analyses	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	None provided None provided	0 0
Discussion				
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	Partial consider relevant to all potential stakeholders.	1 1
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	Partially met –limitations of the review process not discussed	1 1
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	Partially met recommendations could be more specific Fully met	1 2
Funding				
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	Mentions but does not state what the role of the funders for the review	1 1

Appendix 8: Interobserver agreement: The kappa statistic

		Observer 1			
		0	**1**	**2**	**Total**
Observer 2	**0**	27	4	2	33
	1	0	56	12	68
	2	0	2	61	63
	Total	27	62	75	164

Number of observed agreements: 144 (87.80% of the observations)

Number of agreements expected by chance: 60.0 (36.56% of the observations)

Kappa= 0.808

SE of kappa = 0.040

95% confidence interval: From 0.729 to 0.887

The strength of agreement is considered to be 'very good'.

http://graphpad.com/quickcalcs/kappa1.cfm

Reference

Viera, A.J., & Garrett, J.M. (2005). Understanding interobserver agreement: the kappa statistic. *Family medicine, 37*, 360-3.

Prevalence of child sexual abuse reported by adolescents in the past 10 years: A meta-analysis

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Abstract

Child sexual abuse (CSA) constitutes a worldwide public health problem with serious social, service and financial implications for society and those children affected, who may require lifelong physical and psychological support. A systematic review and meta-analysis of prevalence studies of contact and non-contact CSA reported by adolescents within the past ten years was conducted. Electronic databases and grey literature were searched up to May 2014, alongside consultation with experts. Consistent with eligibility criteria, studies reported numeric data to enable the calculation of prevalence rates. Following the systematic review nine studies were selected. Articles were assessed for quality by independent reviewers. All studies were published between 2002 and 2013 in peer-reviewed journals, and originated from China, North America, and Europe and provided prevalence estimates for contact and non-contact CSA. Meta-analyses were conducted overall and across male and female populations. Prevalence estimates varied considerably across studies with contact CSA ranging from 2% to 39.8%. Overall non-contact CSA estimates ranged from 1% to 24.6% and were substantially heterogeneous, and therefore findings should be interpreted with caution. Findings are at least partly due to variations in study and methodological characteristics, including differences in definitions of CSA and inconsistent use of validated instruments. To address such challenges, further epidemiological studies which adhere to clear guidelines, using standard definitions, standardisation of instruments and standardisation of reporting and dissemination of findings are required for development of health policies, resource allocation and prevention initiatives for clinical and social services.

Keywords: Child sexual abuse, Adolescence, Meta-analysis, Prevalence, Systematic review

Child sexual abuse refers broadly to a spectrum of sexually inappropriate actions between a child and an adult or older child (Averdijk, Müller-Johnson, & Eisner, 2011). Child sexual abuse is a controversial topic reflected by heightened public and political awareness and scientific interest (Barth, Bermetz, Heim, Trelle, & Tonia, 2012) and has been described as global and persistent (Stoltenborgh, van Ijzendoorn, Euser, & Bakermans-Kranenburg, 2011). Studies worldwide suggest that approximately 20 per cent of girls and 5 to 10 per cent of boys experience sexual abuse (World Health Organisation, 2013). In the UK, recent figures revealed that 18,915 sexual crimes were reported against children under 16 in England and Wales in 2012/2013, and 1 in 20 children (4.8 per cent) have experienced contact sexual abuse (NSPCC, 2014).

The consequences for victims of CSA may be severe and enduring and include physical, psychological and behavioural symptoms (Fergusson, Boden, & Horwood, 2008). There are also financial costs for society, particularly for high-income countries, pertinent at a time when health care services are under increased pressure with high demand for provision of services and allocation of economic resources (Gilbert, Widom, Browne, Fergusson, Webb, & Janson, 2009).

Countries worldwide are recognising the problem and focus is turning towards development of effective prevention and intervention programmes and appropriate allocation of resources. To facilitate this process, an accurate understanding of the extent of the problem is required (WHO, 2013). Knowledge of prevalence is important and epidemiological studies assist researchers to investigate areas where it is claimed that there is no abuse and where studies are not available, for example Africa, Latin America and Asia (Finkelhor, as cited in WHO, 2013). There is also a strong argument to suggest that epidemiological studies are important in terms of highlighting the magnitude of the problem and mobilising state bodies

into more effective child protection activities, especially in those areas of the world where there is a dearth of data (Mikton, as cited in WHO, 2013).

A more accurate understanding of the magnitude of CSA can be gained through conduction of meta-analyses. To date, important information has been gathered from several meta-analyses including those from North American populations where prevalence estimates range between 12% to 17% for girls and 5% to 8% for boys (Gorey & Leslie, 1997) and 20% for girls and 7% for boys (Bolen & Scannapieco, 1999). Internationally, prevalence was estimated at 18% for girls and 7.6% for boys (Pereda, Guilera, Forns, & Gómez-Benito, 2009b) and 19.7% for girls and 7.9% for boys (Stoltenborgh et al., 2011). Barth et al.'s meta-analysis (2012) estimated 15% of girls and 8% of boys had experienced CSA.

There are however, considerable challenges to conducting meta-analyses of CSA prevalence data, one being high rates of heterogeneity, which remains largely unaccounted for (Mikton, 2013, as cited in WHO, 2013). Prevalence estimates vary considerably, for example, 0.1% to 71% (Mackenzie, Blaney, Chivers, & Vincent, 1993; Everill & Waller, 1995). Differences across population under study, study design and methodological study characteristics have been investigated as potential moderators of prevalence estimates, for example, geographical sample characteristics and culture (Stoltenborgh et al., 2011; Kenny & McEachern, 2000b), sampling (Wyatt, 1985), method of data collection (Pereda et al., 2009a) and type of study i.e. self-report vs. informant studies (Stoltenborgh et al., 2011). Type of sample may also impact on prevalence estimates, in that adult self-reports may be subject to recollection bias due to reliance on retrospective accounts, which may skew data where studies draw from mixed populations (Barth et al., 2012).

The main challenge and the most controversial issue affecting the study of CSA, is its definition and operationalisation (Finkelhor, Ji, Mikton & Dunne, 2013).

Important considerations include whether age differential is required, if contact abuse only is included and whether unwanted contact only CSA is included in definitions (Finkelhor, Shattuck, Turner, & Hamby, 2014). Interchangeable and inconsistent use of terminology across studies may also influence prevalence estimates, making it difficult to compare studies. The use of a broad or narrow definition of CSA (including non-contact vs. contact only), may also lead to higher reported prevalence rates (Stoltenborgh et al., 2011). A further important consideration is period of time CSA is assessed and whether time interval points are assessed, i.e. lifetime prevalence vs. past year prevalence (Finkelhor et al., 2014).

To address potential bias of broad timeframes and mixed populations of adults, children and adolescents, Barth et al., (2012) meta-analysed the most recent data collected from youth surveys. The authors concluded that CSA was not more common currently compared to previous figures, with 9% of females and 3% of males reporting forced intercourse and 15% of females and 8% of males reporting mixed abuse, slightly lower than those rates reported in other international reviews (Stoltenborgh et al., 2011; Pereda et al., 2009b). In addressing the limitations of their review, Barth et al. (2012) argue for regular updates and syntheses of the most recent worldwide prevalence estimates to enable comparison of data and to monitor changes over time in the prevalence of contact and non-contact CSA. The World Health Organisation (2013) advocates the use of research as a way to effective child protection, with meta-analysis of data one means to address this.

In summary, there is a growing need for accurate and reliable CSA estimates to facilitate development of effective intervention in worldwide health care (WHO, 2013). Preceding systematic reviews and meta-analyses have predominantly reported estimates based on adult samples spanning an extensive time period (Barth et al., 2012). This systematic review and meta-analysis aimed to address the gap by

identifying and synthesising the most recent worldwide studies of contact and non-contact CSA prevalence estimates reported by adolescents in the past 10 years.

Method

A review protocol was developed based on best practice guidelines and empirical frameworks, produced by the Cochrane Collaboration (Clark et al., 2011).

Literature Searches

The studies identified were observational, non-randomised and/or population based studies. A sensitivity over specificity approach (Petticrew & Roberts, 2006) was adopted of searching electronic databases and other specific publications sources. A systematic search of electronic databases was conducted in May 2013 and updated in October 2013 and May 2014. Subject headings and keywords related to child sexual abuse and prevalence were searched using combined concepts of the population, prevalence, and the type of study. The search terms and keywords used were in English (Appendix 1).

The primary searches included databases: (a) OVID EMBASE (1974 –25th February 2013, using the keywords "child sexual abuse", "prevalence" and "adolescence" limited by year (2002 to present); (b) OVID MEDLINE/EMBASE (1946 – February 25th 2013), using the keywords: "child sexual abuse", "prevalence" and "adolescence", limited by year (2002 to present); (c) EBSCO PsycINFO using the keywords "adolescent(s)" ("high school students", "child" and "children"), "prevalence" ("epidemiological"), "child sexual abuse" ("child sexual assault", "child sexual exploitation", "child sexual maltreatment" and "child sexual violence"), limited by year (2002 to present); EBSCO Psychology and Behavioural Sciences Collection using the search terms; "adolescent(s)" ("high school students", "child" and "children"), "prevalence" ("epidemiological"), "child sexual abuse" ("child

sexual assault", "child sexual exploitation", "child sexual maltreatment" and "child sexual violence"), limited by year (2002 to present).

Peer-reviewed studies, conference abstracts, government reports, thesis/dissertations sources were also searched using the descendency method (Cooper, 1982) which was applied to one questionnaire, the Juvenile Victimisation Questionnaire (JVC: Hamby, Finkelhor, Ormrod, & Turner, 2004). Reference sections in articles and books covering topics related to child sexual abuse and prevalence of sexual violence towards children were examined for references not located from other sources. The journals *Child Abuse & Neglect, Child Abuse Review, Child and Adolescent Psychiatry* and *Mental Health and Child Maltreatment* were also searched by hand. Unpublished data (including dissertations) were sought from various sources, including Dissertations Abstracts online (EThOS). Grey literature was also searched (opensigle.inist.fr (opengrey.eu) HMIC Database; NTIS, National Technical Information Service; PsycEXTRA) using key words "child sexual abuse", "prevalence" and "adolescence".

Experts working in the field were contacted to find additional prevalence studies of CSA as reported by adolescents in the past 10 years in both published and unpublished forms. Authors of studies deemed relevant, but for which key information was not presented in the paper, were also contacted and asked to provide additional information to include within the analysis (Appendix 2). If the additional information was not provided, studies were excluded on the basis that they did not fulfil criteria.

Criteria for Selection of Studies

Eligibility criteria in this review covered study, population and participant characteristics based on the guidelines by O'Connor, Green and Higgins (2008). The criteria for inclusion were categorised by population, study design and outcomes of

interest: (a) *Population* Adolescence was defined from 10 to 19 years (WHO, 2014), (b) *Study design* Epidemiological studies, observational, non-randomised studies and/or population-based studies where data were collected between 2000 and 2014, (c) *Outcomes of interes*t were prevalence data of 'contact' and 'non-contact' CSA containing numerical data to enable calculation of effect sizes. CSA was defined as any completed or attempted (non-completed) sexual act, sexual contact with, or exploitation (i.e., noncontact sexual interaction) of a child by a caregiver (Leeb, Paulozzi, Melanson, Simon, & Arias, 2008).

Studies were identified where titles and abstracts indicated that they might have contained usable data. These were screened and assessed for eligibility by the primary researcher. Where relevant abstracts remained, full-text publications were obtained and reviewed (Appendix 3). Studies were included if they contained numerical data to enable the calculation of prevalence rates for conditions of interest; an effect size could be calculated for prevalence of contact and non-contact CSA overall and across gender; data were collected through self-reports using specific measures assessing CSA.

Studies were excluded if they fell into one or more of the following categories: (a) study included a child sample (younger than 11) or an adult only or mixed sample (19 years of age and above), (b) child sexual abuse had not been differentiated from other types of child abuse, (c) contact and non-contact child sexual abuse were not reported separately, (d) incidents or prevalence were not reported by adolescents directly, (e) study contained a sample using secondary data where the results were published in another paper, (f) studies were based on clinical samples (not representative of the population), (g) single case studies, and (h) studies which present mixed results for child sexual and physical abuse.

Where duplicate reports and studies involving the same data were identified, one study was excluded, as were those studies not in the English language and where it was not possible to obtain an accurate translation. In addition, studies where it was not possible to extract necessary information, and where authors failed to provide this, were also excluded.

Data Collection

The primary author extracted data from the included studies (Appendix 4). The following categorical variables were coded where possible: (a) first author of the paper, (b) source of the data (e.g. journal article, dissertation, unpublished manuscript), (c) date of publication, (d) date the data were collected, (e) total number of the sample included (overall and across male and female), (f) mean age of participants (where age was expressed as a range the corresponding mid-point was used), (g) the type of population sample (general, students and community), (h) the method of data collection (self-report questionnaire, interview), (i) sampling frame, (j) measure of CSA, (k) type of prevalence of child sexual abuse used (contact sexual abuse, non-contact sexual abuse), and, (l) prevalence as reported across gender and type of abuse (including male/female, n and CI where reported).

Evaluation of the Methodological Quality of the Studies and Risk of Bias

Methodological quality was assessed by exploring the internal validity of included studies, the extent to which study design, procedure and reporting reduce the risk of bias in observational studies. This was performed using the STROBE Statement (& STREGA): STrengthening the Reporting of OBservational studies in Epidemiology (Vandenbroucke, von Elm, et al., 2007), guidelines and recommendations developed to improve the quality of reporting of observational studies. The STROBE statement is a 22-item checklist including: title, abstract, introduction, methods, results, and discussion sections of articles (Appendix 5). Two

reviewers, the first and fourth authors, independently assessed study quality. Discrepancies were investigated and agreement was reached by correcting errors and clarifying category definitions by consensus. Consistent with guidelines for reviews, an individual components approach was assumed when reporting findings of methodological rigour and quality, contrary to providing overall quality scores (Juni, Witschi, Bloch, & Egger, 1999).

Data Analysis and Synthesis of Results

Meta-analytic procedures are used routinely within medical sciences often to test intervention effectiveness mostly through randomised controlled trials (RCTs). Given the topic of prevalence of CSA, there were no available RCTs and available studies fell into the category of non-randomised studies (NRSs), more specifically, observational studies (Reeves et al., 2013). Authors argue that NRSs are valuable in terms of studying human experiences (exposures) which are unlikely to be assessed accurately through RCTs (e.g. Stroup et al., 2000). Child sexual abuse would likely be considered such an exposure. The number of meta-analyses of NRSs have increased considerably over recent years and are routinely included in Cochrane Reviews (Stroup et al., 2000).

The main methodological and study characteristics for each study included in this review which are numbered 1 to 9, and identified in parentheses throughout the report are summarised in Table 1. The characteristics of included studies are also presented narratively and explored qualitatively as potential sources of heterogeneity. Study selection, methodological quality assessment, and data extraction were managed with Microsoft Excel (2010).

Meta-analysis of the CSA prevalence data. Quantitative meta-analysis of the data and production of forest plots were conducted in Excel using the macros

developed by Neyeloff et al. (2013). The measure of interest was the prevalence of contact and non-contact CSA as a measure of effect size (outcome). The unadjusted prevalence estimates of contact and non-contact (number of cases or events and the sample size) were re-calculated along with standard errors and study variance based on the information provided in the individual studies. Prevalence estimates were obtained from population-based studies of adolescent self-reports of CSA and stratified across type of CSA and gender.

Analyses were conducted separately for contact and non-contact CSA overall and for males and females. Individual studies were weighted (w) by the inverse of their variance. Weighted prevalence estimates were obtained by multiplying each prevalence rate by the study weight under a single effect model. Prevalence estimates for each individual study were reported with 95% confidence intervals (95% CI) around these estimates. Forest plots visually represented the data and illustrate the magnitude of heterogeneity between studies. Statistical heterogeneity was assessed according to the Cochran's *Q*-statistic (Hedges & Olkin, 1985; Borenstein et al., 2005) based on the null hypothesis that the true prevalence's are equal across each study. *Q* is distributed as a chi-square statistic with *k* (number of studies) minus 1 degree of freedom, where *K* is the number of prevalence rates. Statistical heterogeneity across studies was identified by a *p*-value less than 0.05 for the Cochran's Q test (Higgins & Thompson, 2002).

As heterogeneity was expected, the I^2 statistic, a measure of the degree of inconsistency across the studies was calculated, to explore whether the variation in prevalence estimates of CSA was due to actual variation in prevalence as opposed to sampling error. The I^2 statistical test of heterogeneity describes the proportion of variation in prevalence estimates that is due to genuine variation in prevalence rather than sampling error. I^2 is calculated from Cochrane Q according to the formula: I^2 =

100% × (Cochrane Q – degrees of freedom) / Cochrane Q. Any negative values of I^2 are considered equal to 0, so that the range of I^2 values is between 0% and 100% (I^2 less than 25% = small; I^2 between 26 and 74% = moderate; I^2 75% and above = high) (Higgins & Thompson, 2002).

Where statistical heterogeneity is low, a fixed-effects model can be used as it assumes that there is one true effect size that underpins all of the included studies in the analysis and differences in effects are due to sampling error. In this study, all analyses were performed using the random-effects model as it allows for true effect sizes to differ and to assume it possible that all studies share a common effect size and that effect sizes vary across individual studies (Borenstein, Hedges, Higgin, & Rothstein, 2009; 2010). Methodological and study characteristics (e.g. study design, and definitions and measures of CSA) were inspected qualitatively as potential sources of heterogeneity.

Results

Search Results

The systematic review identified 382 citations. After initial screening of titles and abstracts and the removal of duplicates, 275 studies were screened and identified as being potentially relevant. Following abstract and full text review, ten articles satisfied the pre-specified eligibility criteria. Two references were identified as presenting the equivalent data (Averdijk et al., 2011; Mohler-Kuo et al., 2014). Therefore, the review included nine unique studies reported in ten publications. Figure 1 shows a flow diagram of record identification, screening, selection and inclusion through the systematic review (Moher et al., 2009).

Characteristics of the included Studies

General information All included studies were surveys with a cross-sectional or population retrospective design published between 2002 and 2014: eight in

academic journals (1-7, 9), and one research report (8). All studies reported lifetime estimates and three provided additional 12-month estimates (1, 8-9). Three studies focused exclusively on the prevalence of child sexual abuse (1-2, 6) and two studies assessed prevalence in relation to health risk behaviours, such as suicidality (3, 4). The remaining studies examined CSA prevalence as a peripheral research question in large-scale surveys on adolescent health and child maltreatment (5, 8-9). Data were collected from year 2000 in all publications.

Study population characteristics Sample sizes ranged from n = 351 (3) to n = 18,341 (1). All studies examined both sexes, except one female only population (3). In four studies (1-4), participants originated from China; other studies comprised of populations from Denmark (5), Mexico (6), Sweden (7), UK (7) and Switzerland (9). Eight studies utilised student populations (1-3, 5, 6-7, 9) and two used community samples (4, 8). Response rates were considered very high (≥ 90%) in one study (1), high (between ≥ 70 and < 90%) in four studies (2, 3, 6, 7), and medium (between 56 and < 70%) in one study (8). Three studies did not clearly report responses rates (4, 5, and 9).

Data collection and definition Seven studies (1-4, 6-7) used self-administered paper-pencil questionnaires; two adopted a multimedia computer-based self-administered interview (CSAI) questionnaire approach to collecting data (5, 8). Studies varied in their definition and operationalisation of CSA. The following were defined inconsistently across studies: definition of CSA, definition of a child (i.e. 15 or under in study 5) and inclusion of peer abuse (6, 7). Definitional differences also included: age differential between victim and perpetrator, the number of questions used to assess CSA, and whether consent was a defining feature of CSA. All studies reported overall contact and non-contact prevalence. Four studies reported

'penetration' (1, 7-9), four included 'physical CSA, no intercourse/penetration' (1, 5, 7, 9), and one study provided an 'attempted/completed intercourse/penetration' (5).

Methodological quality of included studies

The quality ratings allocated for each STROBE checklist item were agreed and tabulated (Appendix 6). Items were coded as follows: '0' – where the criteria was not met, '1' = where study partially met criteria, '2' = the study fully met the criteria. Items 6b, 12e, 14c, and 16c were not applicable to all studies and were therefore not included. . There was good agreement between raters (92.2%, Kappa 0.87, (95% CI, 0.79 to 0.94; Appendix 7). Figure 2 shows the agreed quality ratings.

Quality criteria

For the most part, studies utilised samples of considerable size and response rates fell mostly within the high and medium range. Most studies measured CSA using validated measures or authors justified validity of the used methods from previously published research. All studies provided CSA estimates based on multiple behavioural questions identifying different types of CSA opposed to a single general screening question.

Funding of the study was stated by seven studies (1-3, 5, 7-9); although role of the funding organisation in data analysis and interpretation of the results was considered poor in all studies, as was conflict of interest. Ethical approval of the study was reported across all studies. Aims and objectives of the studies were provided and deemed well covered in five studies (1, 2, 3, 7-9), and adequately covered in three studies (3, 5, 6). Sampling of participants was addressed by all studies. Reference period (lifetime and/or past year prevalence of CSA) was included in the definition of the outcome in all studies. The same methods were used to measure outcome in the total population and in subgroups (e.g. gender and non-contact and contact types of CSA) in all studies. Lifetime period of prevalence was

reported by all studies. Three studies also provided past year prevalence estimates. Precision of estimate (error, 95% CI) was generally well reported as was participant and outcome data and the main results.

Despite these strengths, definitions of CSA varied considerably and were operationalised differently across studies, largely with reference to penetration. Measurement of variables varied across studies. The sexual victimisation module from the Juvenile Victimisation Questionnaire (JVQ, Hamby et al., 2004), or a modified version, was used in four studies, considered to be a "gold standard measure" (1, 5, 8-9). Authors justified validity of the methods used from previously published research in three studies based on an existing instrument (e.g. Chen's Instrument, as cited in Chen, 2006; 2-4). One study used a combination of the JVQ (Hamby et al., 2004) and the Sexual Abuse and Victimisation Questionnaire (SAVQ; 9). Another study used a questionnaire based on a Norwegian survey of young people's attitudes towards sexuality and sexual abuse (Mossige, 2001, in Priebe & Svedin, 2008) combined with questions from Nordic surveys concerning young people's sexual experiences (e.g. Edgardh, 2001) along with study specific questions (7). One study used a non-validated measure developed for the study, which was considered a methodological flaw (6).

Further methodological weaknesses included poor use of information in the titles of studies (e.g. reference to study design) and poor, or absent, reporting and assessment of sampling bias (1-3, 5, 6-7). Missing data and reasons for non-participation were also poorly addressed. There were also incidents where data were not included or obvious to the reader. Figure 2 shows assessment of agreed reporting quality ratings across STROBE items.

Analysis of the Prevalence of contact and non-contact CSA

Data on the prevalence estimates of CSA are analysed and presented according to type of CSA: contact CSA and non-contact CSA, overall, and for males and females. Contact estimates are presented followed by non-contact results (Appendix 8).

Prevalence of overall contact CSA: All studies assessed the prevalence of contact CSA. Estimates ranged from 2% to 39.8% (4, 7). Meta-analysis of prevalence yielded a pooled CSA prevalence rate of 11.88% (95% CI: 7.66, 16.02). There was significant evidence of heterogeneity between the studies ($p < 0.05$; $I^2 =$ 99.48%). Heterogeneity was explored and an outlier estimate of 39.8% was identified as the highest contact CSA estimate (7). Following exclusion of the outlier, heterogeneity remained high ($p < 0.05$; $I^2 = 98.01\%$) and estimates ranged between 2% to 14% (4, 3). Figure 3 shows all studies assessing contact CSA; Figure 4 shows contact CSA excluding outlier (7).

Prevalence of contact CSA in males: Eight studies reported contact CSA in males. Prevalence estimates ranged from 2.1% to 18.5% (3, 7). Meta-analysis of prevalence revealed a pooled CSA rate of 7.45% (95% CI: 5.22, 9.69). Substantial heterogeneity was present between the studies ($p < 0.05$; $I^2 = 97.46\%$). Sources of heterogeneity were explored and heterogeneity remained high following exclusion of two outlier estimates (6, 17.3%; 7:18.5%; $p < 0.05$; $I^2 = 86.65\%$); estimates ranged between 2.1% and 6.1% (1, 3). Figure 5 shows contact CSA prevalence estimates reported in males.

Prevalence of contact CSA in females: Nine studies evaluated contact CSA in females. Estimates ranged from 1.7% to 58.3% (4, 7) shown in Figure 6. Meta-analysis of the prevalence yielded a pooled CSA rate of 14.99% (95% CI: 8.57, 21.39). Substantial heterogeneity was evident between the studies ($p < 0.05$; $I^2 =$

99.49%). Sources of heterogeneity were explored. An outlier estimate of 58.3% was identified as the highest contact CSA estimate in females (7). Heterogeneity remained following exclusion of the outlier ($p < 0.05$; $I^2 = 98.57\%$) and prevalence estimates ranged from 1.7% to 15.4% (4, 9). Figure 7 shows contact CSA in females excluding outlier (7).

Prevalence of overall non-contact CSA: All CSA studies reported non-contact CSA. Estimates ranged from 1% to 24.6% (5, 9), shown in figure 8. Meta-analysis of the prevalence yielded a pooled CSA prevalence rate of 10.12% (95% CI: 6.17, 14.07). Heterogeneity was substantial across the studies ($p < 0.05$; $I^2 = 99.64\%$). An outlier estimate of 24.6% was identified as the highest overall non-contact CSA estimate (9). Heterogeneity remained high following exclusion of the outlier ($p < 0.05$; $I^2 = 99.23\%$); prevalence ranged from 1% to 17.4% (5, 3).

Prevalence of non-contact CSA reported by males: Seven CSA prevalence studies assessed non-contact CSA in males. Two studies (3, 6) did not provide numerical data for calculation of non-contact CSA prevalence (3 did not include a male population; 6 reported 0% prevalence estimate of non-contact CSA in males). Prevalence estimates ranged from 1% to 14.9% (5, 9) shown in Figure 9. Meta-analysis yielded a pooled CSA rate of 7.92% (95% CI: 4.05, 11.78). Heterogeneity was considerable between the studies ($p < 0.05$; $I^2 = 99.2\%$).

Prevalence of non-contact CSA in females: Nine studies evaluated non-contact CSA in females and prevalence estimates ranged from 1.1% to 35.1% (5, 9). Meta-analysis of the prevalence revealed a pooled CSA rate of 12.25% (95% CI: 7.74, 16.75). Figure 10 shows non-contact CSA prevalence estimates in females. Heterogeneity was high between the studies ($p < 0.05$; $I^2 = 99.4\%$). An outlier estimate of 35.1% was the highest non-contact CSA estimate in females (9).

Following exclusion, heterogeneity remained high ($p < 0.05$; $I^2 = 98.4\%$) and estimates ranged between 1.1% and 18.5% (5, 9).

Summary of the overall results

Prevalence estimates were substantially heterogeneous across all analyses and there was wide variation in rates across studies. Table 2 shows the ranges of contact and non-contact CSA prevalence estimates overall and for males and females.

Discussion

This systematic review summarised the evidence from nine studies providing prevalence estimates of contact and non-contact CSA. To the best of the authors' knowledge, this review is original in that it has built on the recommendations of a previous meta-analysis (Barth et al., 2012) by conducting meta-analytic calculations for contact and non-contact types of CSA, overall and across males and females, based on the most recent prevalence estimates reported by adolescents in the past decade. Descriptive information showed that all studies were published in peer-reviewed journals and indicated that CSA is being studied worldwide. China made a significant contribution to the literature with four of the nine papers included in this quantitative synthesis of data.

With regards to the quantitative analysis, prevalence estimates varied significantly and the ranges were large across all calculations of CSA subtype and population, indicative of substantial heterogeneity between studies, consistent with Barth et al. (2012). For contact CSA, including males and females, prevalence estimates ranged from 2% to 39.8% and were substantially heterogeneous ($p < 0.05$; $I^2 = 99.48\%$). This was also consistent with contact CSA in males, where estimates ranged from 2.1% to 18.5% and 1.7% to 58.3% for females. Similar to overall contact, there was wide variation in estimates and studies were highly heterogeneous for males ($p < 0.05$; $I^2 = 97.46\%$) and females ($p < 0.05$; $I^2 = 99.49\%$).

A similar pattern was repeated for prevalence of non-contact CSA. Analyses of overall non-contact CSA revealed estimates ranging from 1% to 24.6% with substantial heterogeneity ($p < 0.05$; $I^2 = 99.64\%$). Non-contact CSA prevalence estimates ranged from 1% to 14.9% for males and 1.1% to 35.1% for females and were highly heterogeneous (males, $p < 0.05$; $I^2 = 97.46\%$; females, $p < 0.05$; $I^2 = 99.49\%$).

Exploration of heterogeneity revealed that one study revealed a comparably higher prevalence rate of overall contact CSA (Priebe & Svedin, 2008). This may be due to the inclusion of peer abuse in the definition and because “contact abuse with penetration" was included in the combined figures from "penetration" and "contact abuse without penetration". Furthermore, “contact abuse without penetration” included pawing or indecent touching. Pawing might include a wide range of different sexual activities; from occasional sexual touches in a crowd of people to fondling without clothes on. The authors acknowledge the large estimate in a later study (2009, available only in Swedish). Consequently, they changed the question that rendered that high prevalence figure since they felt that it was too imprecise (personal communication with the author, February, 2014). Priebe and Svedin (2008) further note, that their female sample was slightly overrepresented and therefore the overall figures were deemed less helpful and accurate (personal communication, February 2014). Nevertheless, data remained considerably heterogeneous across studies when Priebe and Svedin’s (2008) data were excluded, where estimates ranged between 2% to 14% for overall contact CSA and 1.7% to 15.4% for contact CSA in females.

Of further interest, Pineda-Lucatero et al. (2008) reported a comparably high estimate of contact CSA in males, with adolescent boys only reporting CSA with physical contact. This is an intriguing finding, which the authors suggest may be due

to boys not perceiving non-contact CSA as sexual abuse. It has been suggested that this may be influenced by cultural factors; however, this was not the case for adolescent girls. The measure used by Pineda-Lucatero et al. (2009) may also have been a moderating factor influencing prevalence estimates. It was designed for the purpose of the study and had not previously been validated. In addition, it was not clear whether peer-abuse was included in their definition. It is also important to note differences in terms of how "child" is defined within the CSA context. Helweg-Larsen for example operationalised the term CSA according to Danish penal code which criminalises sexual activity with a child below 15 regardless of consent, contrary to other studies which define CSA according to a higher upper cut off range.

Also evident, were the comparably larger prevalence estimates as reported by Mohler-Kuo et al. (2014) for non-contact CSA, particularly overall and for females. On examination of study characteristics, their data relied on a larger number of screening questions to assess CSA compared to previous studies. The literature suggests that the number of questions asked to assess CSA may influence prevalence estimates, as multiple questions may include specific information relating to the definition of CSA used and lead to higher prevalence rates by providing respondents with more cues to recall and report sexual victimisation (Wyatt & Peters, 1985; Stoltenborgh et al., 2011).

The screening questions used by Mohler-Kuo et al. (2014) also aimed to identify a broad range of different types of victimisation and other types of non-contact CSA, more recently brought to the attention of researchers, such as online solicitation. It would seem plausible that definitions including a broader range of non-contact forms of CSA, taking into account technological advances and the popularity of the internet, may yield different prevalence estimates, based on greater opportunities for children to be exposed to CSA behaviours.

This review makes a valuable contribution to research on CSA and has responded directly to issues raised in a previous review (Barth et al., 2012). Through a systematic and comprehensive methodological approach, relevant studies were sourced, screened and synthesised according to pre-specified criteria. Similarly, the methodological quality of individual studies was appraised using a validated quality assessment tool. Much was also gained through personal communication with authors who research actively in the field.

This review confirms the magnitude of CSA as a worldwide public health concern, and supports the proposal for a systematic, uniform and coherent approach to investigating CSA prevalence. Historically, CSA has tended to be investigated as a secondary aim, often assessed through a general screening question, and it has not been possible to differentiate between the different types of CSA. More recently however greater emphasis towards adopting a "gold standard" approach to measuring CSA (e.g. JVQ; Hamby et al., 2004). Even so, this review highlights that studies continue to vary greatly and may be subject to methodological flaws, thus impeding the validity, and reliably of research through inconsistent methods, measures and lack of scientific rigour.

This review included a meta-analysis based on a small number of individual studies, and revealed considerable heterogeneity. This is an important concern and limitation of the review. Previous reviews of CSA prevalence data have quantitatively analysed heterogeneous data (e.g. Pereda et al., 2009b), however, one study decided against providing meta-analytic calculations, (e.g. Schönbucher Maier, Mohler-Kuo, Schnyder, & Landolt, 2012) due to significant heterogeneity between studies. This raises questions regarding the accuracy of findings and therefore the results should be interpreted with caution.

Along with the limited quantitative conclusions drawn from this review, there are additional limitations. In spite of the rigorous protocol, some papers may have been overlooked, and other relevant studies did not meet the inclusion criteria or data were not extractable. The findings of this review therefore may be subject to bias.

Future epidemiological research should strictly adhere to agreed guidelines based on consistent use of uniform definitions of CSA, instrument standardisation and reporting standardisation. This will allow for comparison of data and reduce risk of bias. It is clear that all societies would benefit from the empirical evidence to develop relevant policies and therefore all stakeholders would benefit from clearly disseminated findings and regular international conferences and meetings allowing researchers working in the field to adopt a collaborative approach to best practice research.

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Table 1 summarises the main methodological and study characteristics for each study included in this review

(a) Reference	(b) Data Source	(c) Date publish	(d) Data collection	(e) Total no. of sample	(f) Mean age of sample	(g) Population	(h) Method data collection	(i) Sampling frame	(j) Measure of CSA
1. Chan., 2013 China RR: 95.8%	Peer-reviewed Journal article	2013	November 2009 to July 2010	18,341 Males: 9,773 (53.3%); Females: 8,568 (46.7%)	15–17yrs. Mean age: 15.86 yrs. *sd*=0.97	Students (Grades 9-12)	Self-report survey questionnaire	2-stage stratified sampling; 150 random sample school in 6 Chinese cities	Module of the Chinese version of JVQ (Finkelhor et al., 2005)
2. Chen, 2004 China RR: 70.5%	Peer-reviewed Journal article	2004	2002	2,300 Female: 1155 (50.2%); Male: 1145 (49.8%)	16-19 yrs. Mean age: 17.2 yrs; Female: 17; Male 17.3.	Students (3 high schools: grade 11; 1 technical school grade 11-12	Self-report survey questionnaire	Cross sectional survey convenience sample four Chinese provinces	Items in published surveys (e.g. Chen et al., 2002).
3. Chen, 2006 China RR:75%	Peer-reviewed Journal article	2006	June 2004	351 Females 100%	16-19 yrs. (94.9%); Mean 17.6 yrs.	Students	Self-report survey questionnaire	Cross sectional survey, convenience sample Henan province	Items in published surveys (e.g. Chen et al 2002).

4. Lin et al., China RR: NR	Peer-reviewed Journal article	2011	2009	683; Females: 346; Males: 326	10-18 yrs.	Community	Self-report survey questionnaire	Cross sectional survey multiple stage sampling; rural province China	CSA scale (Chen et al 2004; 2006). Non-contact (3) Physical contact (9); Any CSA (12
5. Helweg-Larsen., Denmark RR: NR	Peer-reviewed Journal article	2006	2002	5829 (94%; 2910 boys and 2918 girls)	15-16yrs. (97% 15-16; 1%< 15; 2%>16 yrs.)	Students 7241 students; 9th grade	Multimedia computer-based self-administered Interviews (M-CASI)	Random sample 183 schools representing all regions of Denmark:	Modified version of JVQ (Hamby, 2004): 14 questions on sexual experience
6. Pineda-Lucatero., Mexico RR: 89.1%	Peer-reviewed Journal article	2008	January to December 2002	1067 Males: 45.9% (490); Females: 65.1% (577)	11-20 yrs; Mean=13. ± 1.1 yrs.	Students	Self-report survey questionnaire	Cross sectional survey in Junior high school	No validated measure: Sexual abuse with physical contact (4 Q's) and without (6 Q's)
7. Priebe & Svedin Sweden RR: 77.2%	Peer-reviewed Journal article	2009	2003	4,339 Females: 2,324 Males: 2,015 males	Mean age 18.15 (*sd* = 0.74)	Students	Self-report survey questionnaire	Population-based study (Baltic Sea Study on adolescent sexuality)	Norwegian survey (Mossige, 2001)

8. Radford UK RR: 60.4%	Report and Peer-reviewed journal article	2011	March to December 2009	2,275 Male: 1126 (49.5%); Females: 1149 (50.5%)	11–17 yrs Mean =13.96 yrs.; *sd*=1.98)	Community	Multimedia computer-based self-administered Interviews (M-CASI)	Random probability sample of UK population	JVQ: Child self-report version: Module: Sexual victimisation (Hamby et al. 2004).
9. Mohler-Kuo Switzerland RR:NR	Peer-reviewed Journal article	2013	September 2009 – May 2010	6,787 Male: 3551 (52.1(50.9-53.4); Female: 3236 (47.9(46.6-49.1).	13-20 yrs. 15.5± .66 yrs. 97% 14-16.9 yrs.	Students 10,092, 9th grade;560 classes, 228 schools; actual: 6,841; 177 schools – 449 classes	Self-report survey - computer assisted questionnaire on laptop	Population survey - stratified; Seven great regions and 26 Cantons of Switzerland.	Child Sexual Abuse Questionnaire (CSAQ) based on previous measures (Halperin et al 1996; JVQ)

Table 2 shows the ranges of contact and non-contact CSA prevalence estimates overall and for males and females

Categories/forms of CSA	♀/♂ Overall	Studies (No.)	♀ Males	Studies (No.)	♂ Females	Studies (No.)
Contact CSA	2.0–39.8	9	2.1– 18.5	8	1.7–58.3	9
Non-contact	1.0–24.6	9	0–14.9	7	1.1–35.1	9
Contact CSA without penetration	3.5-30.1	4	1.5 – 13.0	4	3.4-44.8	4
Contact CSA with penetration	39.8	1	18.5	1	58.3	1
Contact attempted/ completed	6.7	1	4.2	1	9.2	1
Penetration	0.9-9.8	4	0.2-5.5	4	1.7-13.5	4

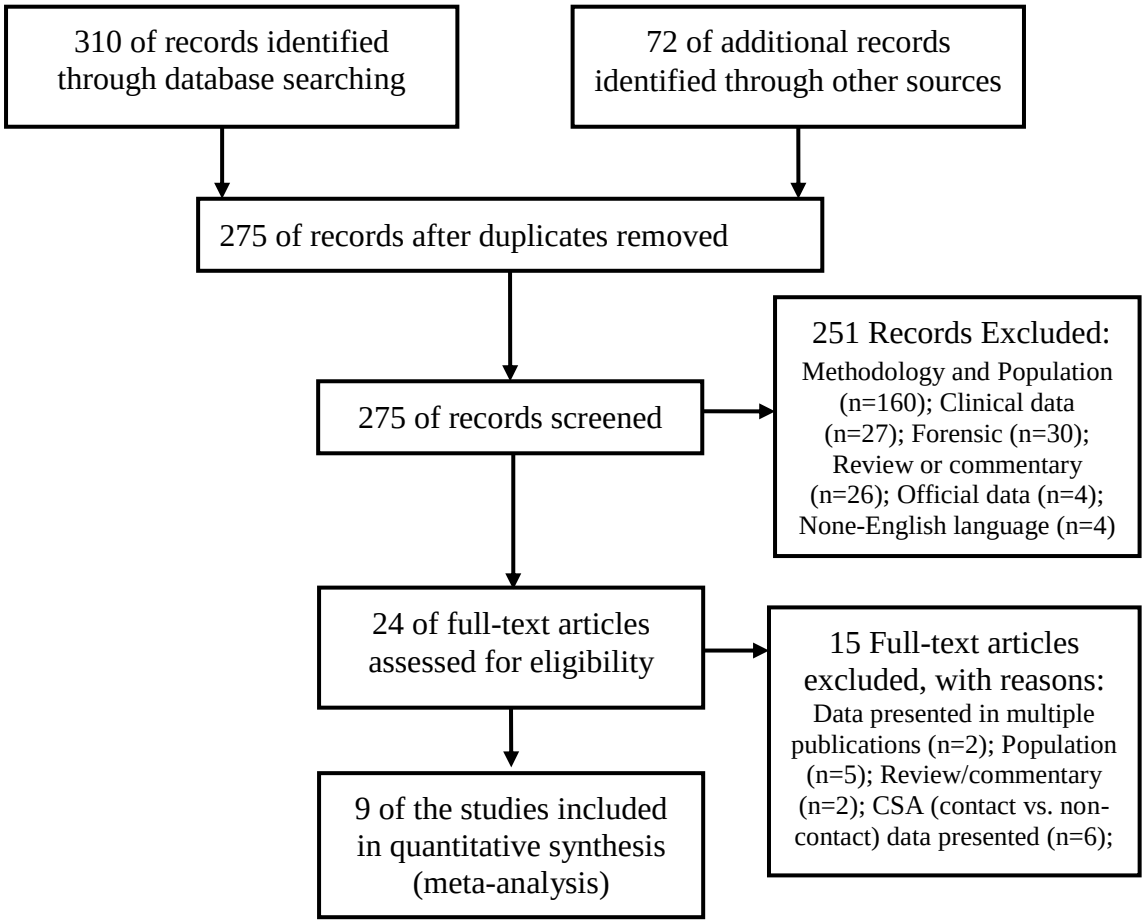

Figure 1. PRISMA flow diagram of record identification, screening, selection and inclusion through the systematic review (Moher, Liberati, Tetlaff, & Alteman, 2009).

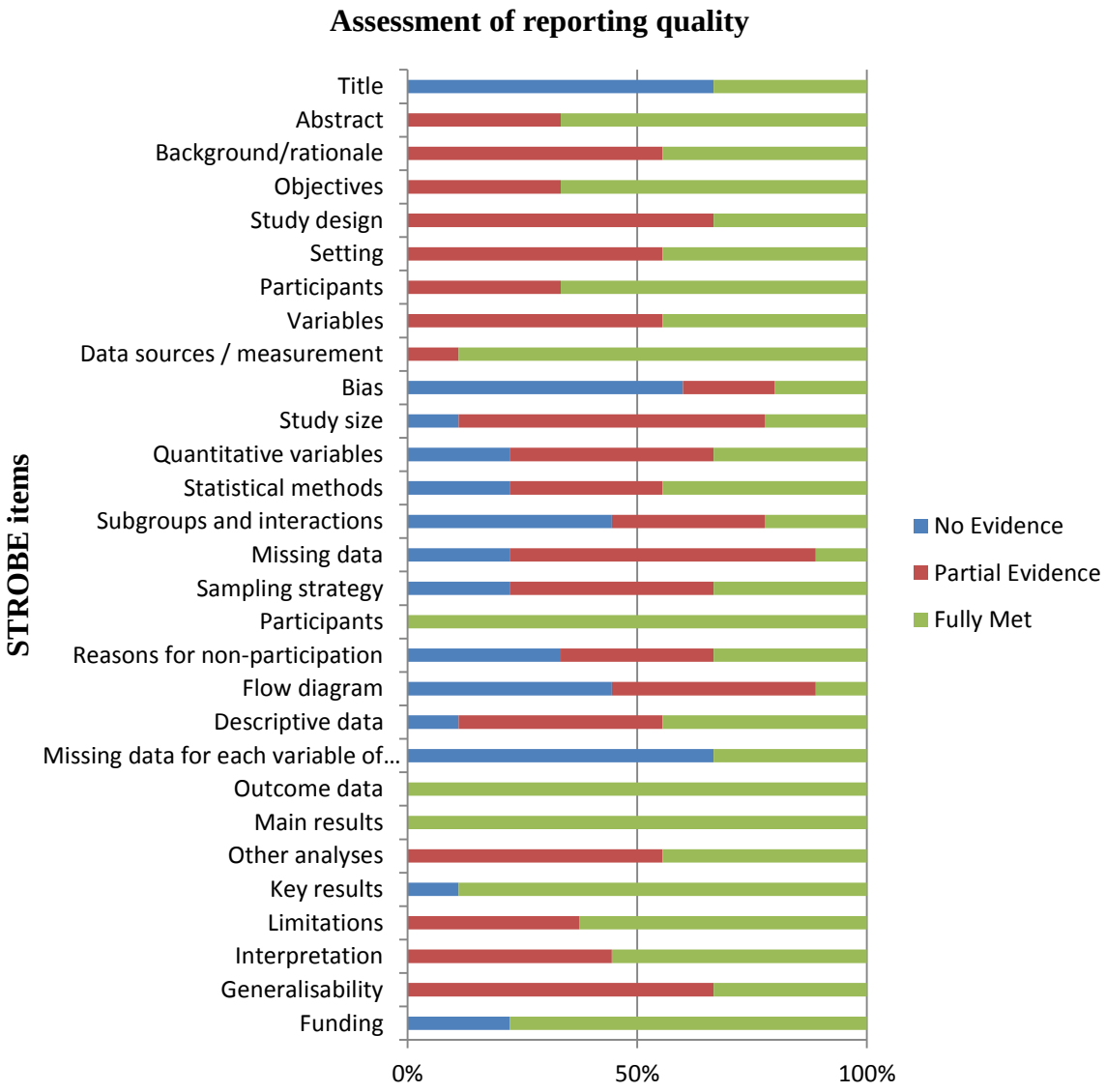

Figure 2. Assessment of reporting quality based on agreed ratings

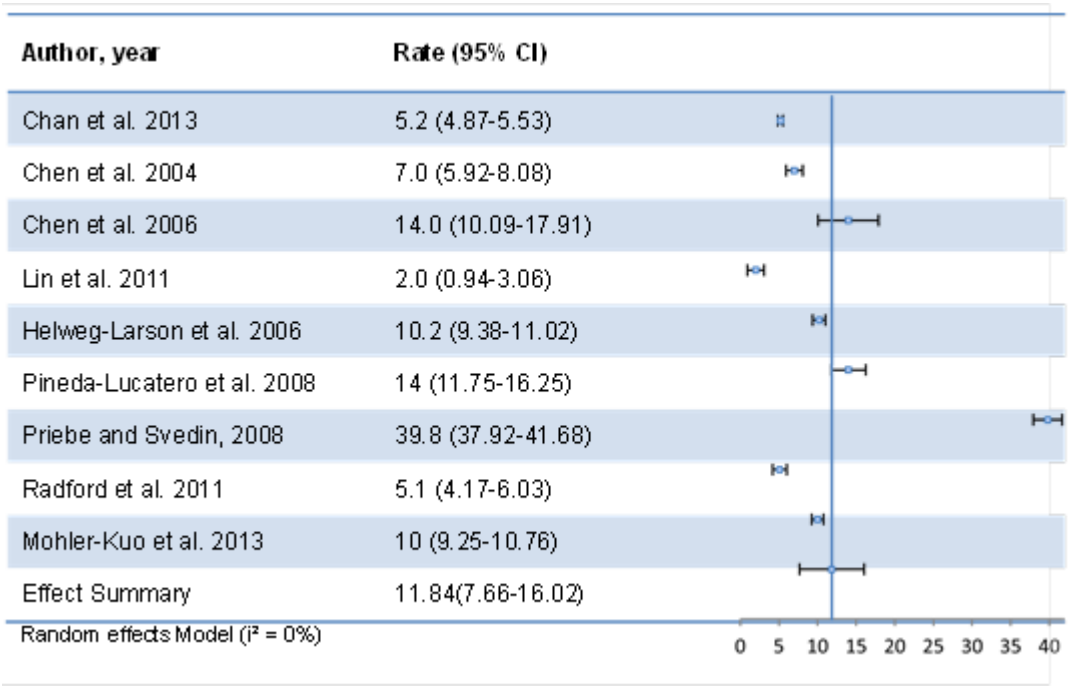

Figure 3. Studies assessing contact CSA prevalence (n=9)

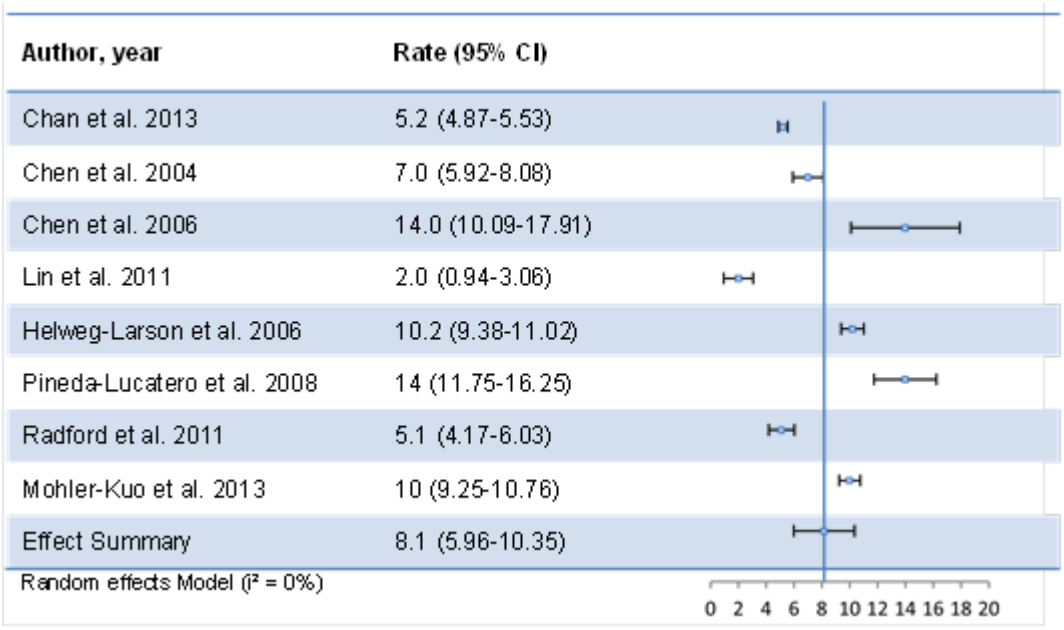

Figure 4. Studies assessing contact CSA prevalence, excluding outlier (n=9)

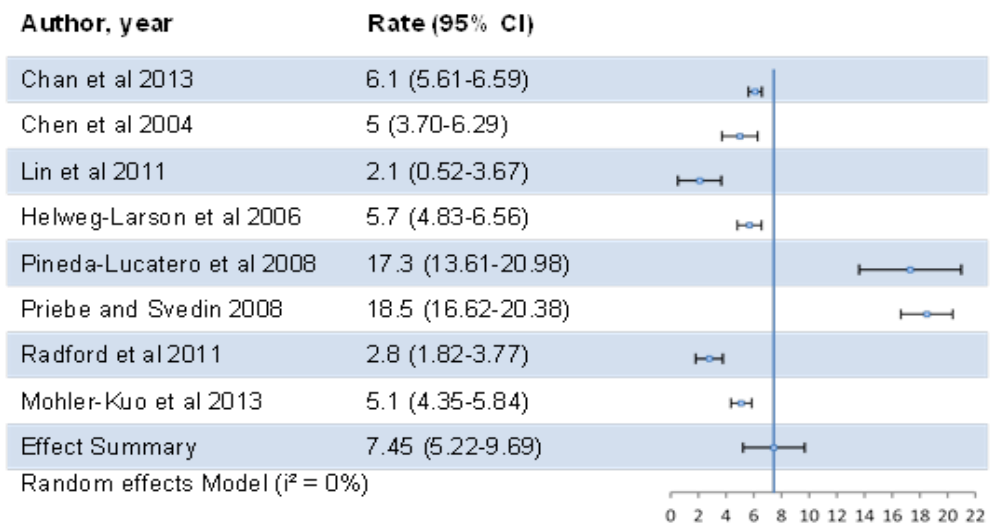

Figure 5. Studies assessing contact CSA prevalence in males (n=8)

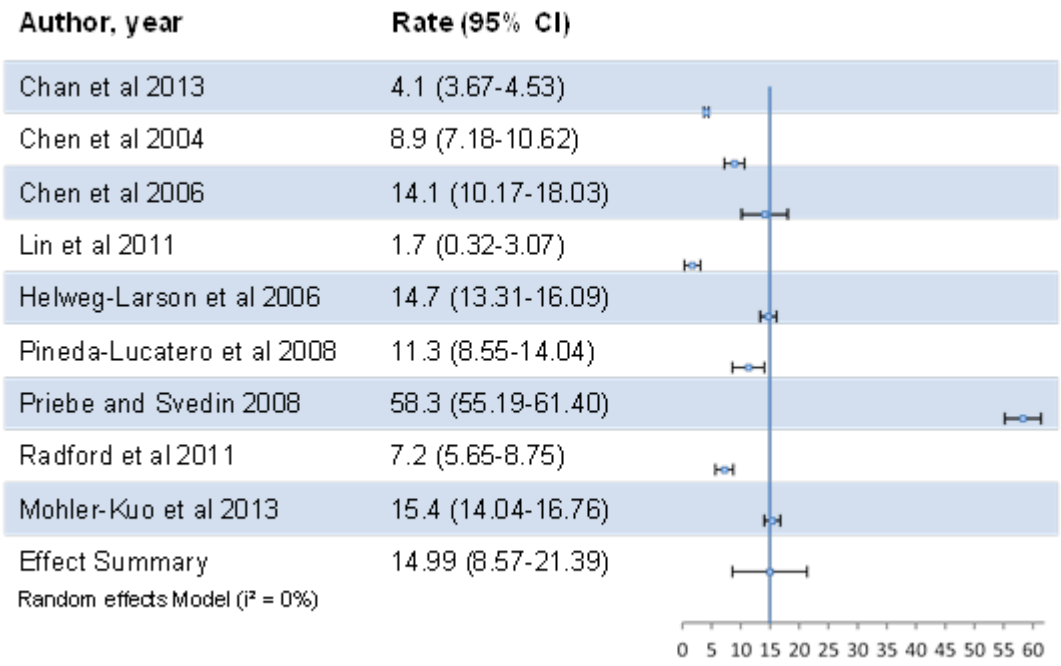

Figure 6. Studies assessing contact CSA prevalence in females (n=9)

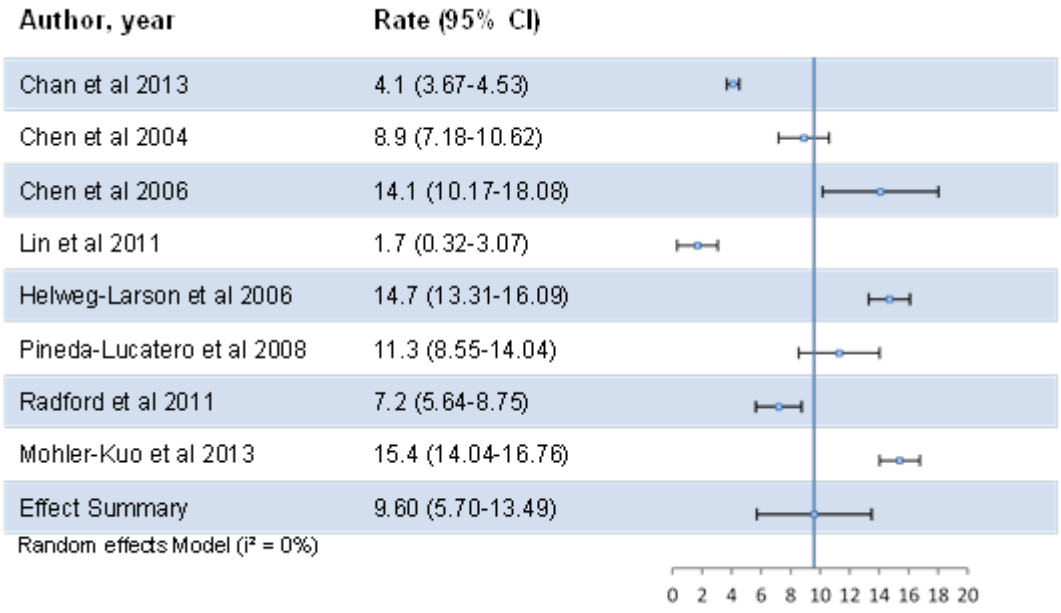

Figure 7. Studies assessing overall CSA prevalence in females, excluding outlier (n=8)

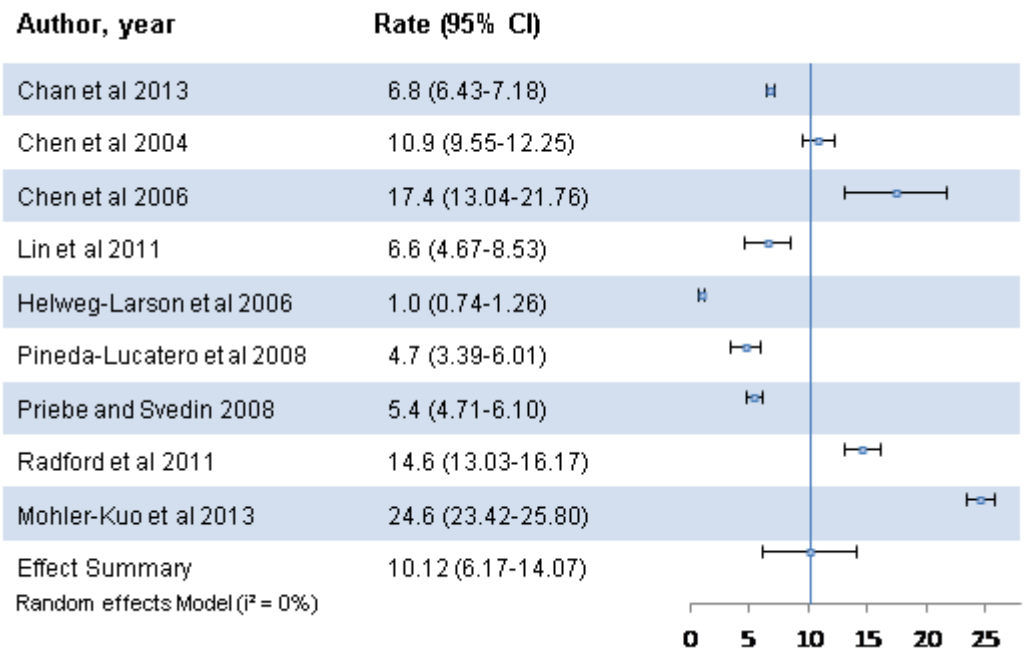

Figure 8. Studies assessing non-contact CSA prevalence overall (n=9)

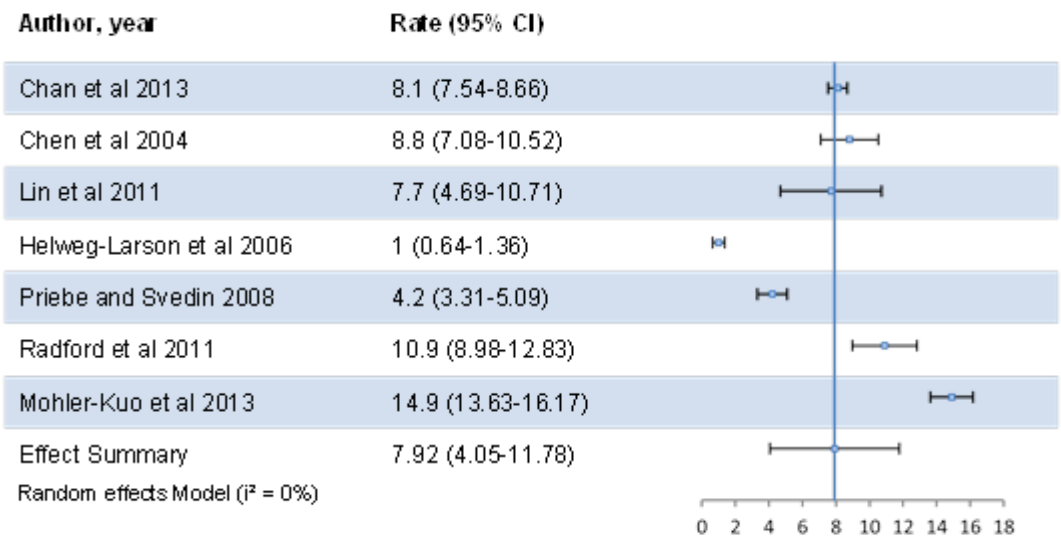

Figure 9. Studies assessing non-contact CSA prevalence in males (n=7)

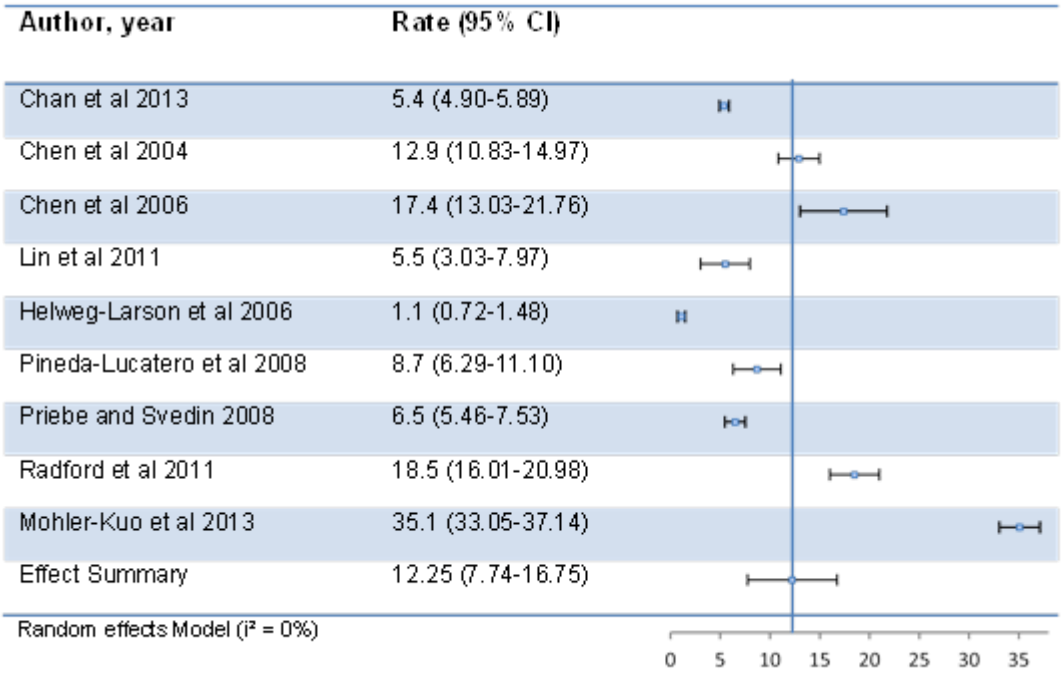

Figure 10. Studies assessing non-contact CSA prevalence in females (n=9)

Appendices: Meta-analysis

Appendix 1: Databases searches and key terms

Table 1: Electronic databases searched for relevant studies and search terms

Database	Edition or date searched	Search Terms ††
MEDLINE (Ovid Interface)	Ovid MEDLINE(R) 1946 to June Week 4 2014	prevalence.mp. or exp Prevalence/ (418481) epidemiology.mp. or exp Epidemiology/(143725) 1 or 2 (541456) child sexual abuse.mp. or exp Child Abuse, Sexual/(8587) child sexual molestation.mp.(6) child sexual assault.mp.(42) child sexual maltreatment.mp.(2) child sexual exploitation.mp.(13) 4 or 5 or 6 or 7 or 8.(8598) exp Self Report/ or self reported.mp.(53013) exp Adolescent/ or adolescent.mp.(1622778) student.mp. or exp Students/(110979) exp Child/(1544803) 11 or 12 or 13.(2501498) 3 and 9 and 10 and 14.(53) limit 15 to yr="2002 -Current".(37)
PsycINFO (Ovid interface)	PsycINFO 1987 to June Week 4 2014	child sexual abuse.mp. (5226) child sexual assault.mp. (104) child sexual maltreatment.mp.(13) child sexual molestation.mp.(19) child sexual exploitation.mp.(36) exp Epidemiology/ or prevalence.mp.(86496) adolescents.mp.(191939) high school students.mp. or exp High School Students/(44888) 1 or 2 or 3 or 4 or 5 7 or 8 6 and 9(83) limit 12 to yr="2002 -Current"(57)
CINAHL PLUS WITH FULL TEXT (EBSCO interface)	June Week 4 2014	MM "Epidemiology" (388598) prevalence (93526) S1 OR S2 (423019) "Child Abuse, Sexual" (2886) “Adolescents” (40366) “High school students” (2420) S5 or S6 (41957)

		S3 AND S4 AND S7 (Limit “2002 – Current” (45)
Psychology and Behavioural Sciences Collection (EBSCO interface)	June Week 4 2014	Adolescents (32039) high school students(3265) Child(143175) prevalence(17938) epidemiology(21340) child sexual abuse(1614) child sexual assault(25) child sexual exploitation(12) child sexual maltreatment(4) child sexual violence(2) S1 OR S2 OR S3 (157060) S5 OR S6 (35523) S8 OR S9 OR S10 OR S11or S12(1627) S4 AND S7 AND S13 (146) S12 AND S13 AND S14 Limiters - Published Date: 20020101-2014 (95)
EMBASE (Ovid Interface)	June Week 4 2014	prevalence.mp. or exp Prevalence/ (609854) epidemiology.mp. or exp Epidemiology/(2097768) 1 or 2 (2251120) child sexual abuse mp or Child Sexual Abuse (7756) child molestation.mp.(92) child sexual assault.mp.(58) child sexual maltreatment.mp.(2) child sexual exploitation.mp.(21) 4 or 5 or 6 or 7 or 8.(7840) exp Self Report/ or self reported.mp.(101953) exp Adolescent/ or adolescent.mp.(1219488) student.mp. or exp Student/(213025) exp Child/(1280262) 11 or 12 or 13.(2147759) 3 and 9 and 10 and 14.(81) limit 15 to yr="2002 -Current".(76)

Appendix 2: Email correspondence with authors of selected authors working in the field of child sexual abuse

E-mail sent to study authors where data was not required but to request for additional studies and information.

Hello […….]

My name is Christina Power and I am undertaking a systematic review of meta-analyses examining the prevalence of contact and non-contact child sexual abuse.

This is in part-fulfilment of a Doctorate in Clinical Psychology at Edinburgh University. Either: 1) Your paper: [.....] appears relevant
2) I am aware that you work in the field and I have accessed your website […….]/ or read your paper [……..].

I was wondering if you were aware of any unpublished/current/ in press meta-analyses which specifically examine the prevalence of child sexual abuse, which I may not have been able to find through a comprehensive searches of electronic databases.

I would really much appreciate it if you can provide any suggestions of any relevant studies that would be most helpful if you could get in contact.

Many thanks,
Christina Power
Trainee Clinical Psychologist/Specialist Psychological Practitioner

Appendix 2 continued

Table 2 shows the e-mails sent to authors requesting additional information

Emails sent to following authors and website administrators:

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 16 January 2013 14:21
To: Jürgen Barth

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 23 January 2013 16:34
To: florence@unicef.org

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 28 January 2013 11:12
To: Eve Leckey

From: christinapower@nhs.net [mailto:christinapower@nhs.net]
Sent: Monday, January 28, 2013 3:51 PM
To: info@ecpat.net

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 03 February 2013 16:04
To: blattafram@blattafram.is

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 05 February 2013 09:19
To: Svava Brooks

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 05 February 2013 09:41
To: crca@crca.org.al

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 04 March 2013 08:07
To: crca@crca.org.al

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 04 March 2013 08:13
To: info@crca.al

Appendix 2 continued

Table 3 show the responses to the e-mail requesting information

Author and/or Organisation	Reply
Jürgen Barth	**From:** Barth [jbarth@ispm.unibe.ch] **Sent:** 06 January 2013 14:47 Dear Christina Thanks for contacting me. Your approach seems reasonable since several reviews are around with different inclusion criteria, time frames, outcomes etc. I am happy to talk to you about this update. Unfortunately next week is very busy for me – but we can talk by phone or skype (jurgen.barth) in the week after next week. Does this match your plans? Happy to contribute. Best wishes Jürgen **Sent:** 07 January 2013 23:41 **To:** Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND) Dear Christina Can you call me on phone or skype at 3pm? Best wishes J Jürgen Barth; Institute of Social & Preventive Medicine; University of Bern **Research Group Mental Health** **FON +41 (0)31 631 3521**
UNICEF florence@unicef.org	**From:** Eve Leckey [eleckey@unicef.org] **Sent:** 24 January 2013 13:21 Dear Christina Power, Thank you for your enquiry. As a research centre we have recently published a report on abuse online. Full report: http://www.unicef-irc.org/publications/652 Summary: http://www.unicef-irc.org/publications/650 However, this will provide only partial information according to your request. You can carry out a keyword search of our publications at www.unicef-irc.org You may also find the names of organizations directly involved in monitoring in the above reports. However, ECPAT is the foremost organization involved in combatting the phenomenon and it is probably best to contract them. The link below is to their EU / Central and Eastern Europe section. http://www.ecpat.net/EI/Regionals_EU_CIS.asp

I hope this is of some help.
Kind regards,
Eve Leckey

Eve Leckey
Publications Assistant
Communications Unit
UNICEF Innocenti Research Centre,
Piazza SS. Annunziata 12, 50122 Florence, Italy
phone: +39-055-2033 222 fax: +39-055-2033 220
eleckey@unicef.org
www.unicef-irc.org
www.facebook.com/UnicefInnocentiResearchCentre

Svava Brooks

Sent: 05 February 2013 03:54
To: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)05 February 2013

Hello Christina,
Thank you for your email. We don´t have anything more recent than 2004 in Iceland. Most of the stats that I am aware of are from the USA. Have you contacted StopItNowUK?
Donald Findlater dfindlater@stopitnow.org.uk
The may have more up to date stats for you. Are you looking for CSA prevention education? You may have seen that our NGO provides comprehensive primary and secondary prevention education to adults, teens and children. Please let me know if you are interested in learning more about our programs. We have not 9 year's experience and the community is seeing the effectiveness of our program with increase in reporting and more organizations are mandating trainings for all staff that works with youth.

Thank you for all you do and best wishes you your research.
Kindly,

Svava Brooks
ps. here is a web site about my work in the USA educate4change.com
Svava Brooks
Program Director
Talk About Abuse to Liberate Kids
www.taalk.org

Vogel, John
Child Welfare Information Gateway Library

From: Vogel, John [jvogel@childwelfare.gov]
Sent: 07 February 2013 14:33

Christina,
The most of the data we're aware of has been published. States have mandated reports that they send in to the federal government.
I might recommend:

Child Maltreatment *2011*

United States. Children's Bureau
Technical Report
xi, 237 p.
Public Domain
Published: 2012
Children's Bureau
Administration on Children, Youth and Families 1250 Maryland Avenue, SW, Eighth Floor
Washington, DC 20024
Available From:http://www.acf.hhs.gov/programs/cb/
View: http://www.acf.hhs.gov/programs/cb/resource/child-maltreatment-2011
Download: http://www.acf.hhs.gov/sites/default/files/cb/cm11.pdf
And

Child Welfare Outcomes Report Data
http://cwoutcomes.acf.hhs.gov/data/overview
Child Welfare Outcomes 2007-2010: Report to Congress.
http://www.acf.hhs.gov/programs/cb/pubs/cwo07-10/cwo07-10.pdf
These are national statistical compilation from state submitted data in the U.S.
Again, I'm not sure that I've answered your questions. Please let me know if I can be of further assistance.
John

John Vogel
Library Services Manager
Child Welfare Information Gateway
A Service of the Children's Bureau
Phone ***703.225.2288***
Fax ***703.225.2257***
Email: jvogel@childwelfare.gov
Website: http://www.childwelfare.gov
Free Subscriptions: http://www.childwelfare.gov/admin/subscribe

From: Vogel, John [jvogel@childwelfare.gov]
Sent: 07 February 2013 18:13
Christina,
OK. Both Child Welfare Outcomes and Child Maltreatment have yearly editions going back a decade or more if that helps.
Let me know if you need any more assistance,
John

Mark Capaldi
ECPAT International

From: Mark Capaldi [markc@ecpat.net]
Sent: 08 February 2013 10:30

Dear Ms. Power,
Your email has been forwarded on to me as I am the head of ECPAT International Research and Policy Team.

Our particular organizational focus is on commercial sexual exploitation of children which in many ways is a subset of child sex abuse. However, for non-CSEC research I'm not able to recommend any specific studies that I can say are necessarily good practice examples as we don't really look into this area specifically. However, I attach two research studies on child sexual abuse that were published in academic journals in 2011 as I was recently trying to see if I could identify any recent data on the problem.

The research undertaken by Erna Olafson presents similar and old data to that which has been around for a while. For example, she reports on retrospective surveys across many countries that have found rates of CSA from 7% to 36% for females and 3% to 29% for males (Finkelhor, 1994). One American review of 16 community sample surveys calculated CSA prevalence for women at 16.8% and 7.9% for men (Gorey & Leslie, 1997).

The fact that this research paper was published relatively recently but still refers to studies from the late 1990s, confirms the dearth of updated data collection and research on this issue. However, the second attached article is interesting (also published 2011) as this paper acknowledges the lack of empirically grounded measures of childhood sexual abuse (indeed, the old figures are again quoted), however, they also have carried out some new research but with a much broader definition of CSA that has shown some startling new figures: CSA prevalence rates of 62%, which is significantly higher than the typically quoted prevalence rates ranging from 12% to 35% of women and 5% to 17% of men (data from the older studies presented).

I hope this is helpful. Needless to say, there definitely seems to be a need to do some research in this area so I wish you the best of luck in pursing this goal.

Best wishes,

Mark Capaldi
Head of Research and Policy
ECPAT International

Appendix 2 continued

E-mail sent to study authors where additional information or data was required to include in the systematic review and meta-analysis.

Hello [……]

My name is Christina Power and I am undertaking a meta-analysis examining the prevalence of contact and non-contact child sexual abuse as reported by adolescents in between 2002 to present.

This is in part-fulfilment of a Doctorate in Clinical Psychology at Edinburgh University. Your paper: [.....] appears particularly relevant and meets the inclusion criteria.

I was wondering if you may be able to provide some additional information to assess whether it is possible to include in the analysis. My criteria are: age adolescents, defined as less than 19 years of age; population/cross sectional research (non-clinical settings or research trials; provided specific and separate prevalence data for contact and non-contact types of CSA self-reported by adolescents.

I see from your papers that the data presented: general query
[…….]; includes or does not include
[…….]; additional information required
[……..]; differentiation.

I would very much appreciate your assistance and time although I understand that it may not be possible to provide the requested information. Any further suggestions of any relevant studies would also be most welcome.

Many thanks,
Christina Power
Trainee Clinical Psychologist/Specialist Psychological Practitioner,
The State Hospital, Scotland

Appendix 2 continued

Table 4 shows the emails sent to authors requesting further information for data synthesis

Emails sent to the following authors requesting further information:

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 17 March 2013 13:06
To: Häuser Winfried whaeuser@klinikum-saarbruecken.de

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 25 March 2013 11:09
To: bassanid@smh.toronto.on.ca

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 25 March 2013 11:28
To: kristina.sesar@tel.net.ba

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 25 March 2013 11:25
To: lspalazzo@hotmail.com
Cc: j.u.b@terra.com.br

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 01 April 2013 08:38
To: jaesupara@gmail.com

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 02 April 2013 12:24
To: pperera@indiana.edu

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 02 April 2013 13:39
To: skarsberg@health.sdu.dk

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 04 April 2013 14:27
To: Schmutzer, Gabriele

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 07 April 2013 09:38
To: huiselijkgeweld@movisie.nl

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
To: Leenen, Anjo [A.Leenen@movisie.nl]
Sent: 08 April 2013 12:09

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 12 April 2013 12:57

To: Pannebakker, F.D. (Fieke)

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND) [mailto:christinapower@nhs.net]
Sent: 12 June 2014 10:33
To: Pannebakker, F.D. (Fieke)

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 13 April 2013 17:24
To: andersson@ciet.org

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 14 April 2013 15:00
To: eklchan@hku.hk

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 30 September 2013 14:05
To: eklchan@hku.hk

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND) [christinapower@nhs.net]
Sent: Sunday, April 14, 2013 10:42 AM
To: Li, Xiaoming xiaoli@med.wayne.edu

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND) [mailto:christinapower@nhs.net]
Sent: Wednesday, April 17, 2013 10:41 AM
To: Foster, Kelly

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND) [christinapower@nhs.net]
Sent: 09 December 2013 12:10
To: Lorraine Radford

From: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND)
Sent: 30 September 2013 14:18
To: ccwy@ummc.edu.my

Appendix 2 continued

Table 5 shows the responses to the second email requesting further information required for data synthesis

Author	Reply to email
Winfried Häuser	**From:** Häuser Winfried [whaeuser@klinikum-saarbruecken.de] **Sent:** 18 March 2013 13:33 Dear Mrs Power, We used the CTQ in our study (see attachment). I am not sure if the items of the sexual abuse scale of the CTQ meet your distinction between contact and non-contact sexual abuse. If yes – we could provide you the data of the persons <18 years (ca 40 persons). I am not aware of another recently conducted study in Germany on sexual abuse with adolescents. Kind regards Winfried Häuser **From:** Häuser Winfried [whaeuser@klinikum-saarbruecken.de] **Sent:** 22 March 2013 07:00 .. do you want to get the subscale scores or the single items of the CTQ of the participants? Kind regards Wh **From:** Häuser Winfried [whaeuser@klinikum-saarbruecken.de] **Sent:** 22 March 2013 11:43 I will forward your request to one of my colleagues Kind regards **From:** Schmutzer, Gabriele [] **To:** Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND) Dear Mrs Power I send you in a ZIP-File the CTQ-Dates from an age range between the ages of 14 and 19 und the bildung of scales from CTQ in a PDF-File. I hope, that you can understand my. My English is not so good. Kind regards G. Schmutzer.
Fieke Pannebakker	**From:** Pannebakker, F.D. (Fieke) [fieke.pannebakker@tno.nl] **Sent:** 12 April 2013 10:04 Dear Christina, In answer to your question at our website I have to inform you that unfortunately, there is no English version of the publication of Alink et al. We've submitted a paper based on Alink et al., so if accepted, I could send it to you in due time. Feel free to remind me in a few months! Kind regards, Fieke Pannebakker

From: Pannebakker, F.D. (Fieke)
Sent: donderdag 12 juni 2014 11:14

Dear Christina,
Thank you for reminding me! Attached you'll find the article in Child Abuse & Neglect, *The prevalence of child maltreatment in the Netherlands across a 5-year period.*
Good luck with finishing your meta-analysis.
Kind regards,
Fieke

Anjo Leenen

From: A.Leenen@movisie.nl
Sent: 08 April 2013 12:09
To: Power Christina (STATE HOSPITALS BOARD FOR SCOTLAND

Dear Mrs Power,
Thank you for contacting us. However, the publication you mention is not ours. It is best to contact TNO, the research institute responsible for this publication, directly.
http://www.tno.nl/content.cfm?context=kennis&content=expertisegroep&lang1=3&item_id=85&Taal=2
They can tell you more about the definition and data you are looking for.
Sincerely yours,
Mrs Anjo Leenen

International officer
MOVISIE, Netherlands centre for social development.
Catharijnesingel 47 | 3511 GC Utrecht, The Netherlands
Postbus 19129 | 3501 DC Utrecht, The Netherlands
T +31 30 789 2146 (direct) | F +31 30 789 21 11
a.leenen@movisie.nl | www.movisie.nl

Dr. Edward Chan

From: Dr. Edward Chan [eklchan@hku.hk]
Sent: 15 April 2013 15:20

Dear Christina,
I have the breakdown for contact and non-contact analysis to be published. Please ask me again in the fall. I can send it to you when it's out.
Best!
Edward

From: Dr. Edward Chan [eklchan@hku.hk]
Sent: 13 December 2013

Dear Christine,
Sorry that I didn't expect to spend more time digging out the very initial analysis to locate the findings. We have been asked to provide breakdowns.
Here attached the figures (blue highlighted are the figures you need). Let

me know if you have any further query.
Appreciate if you'll let me have a copy of your article when it's out.
Best!
Edward

Kelly Foster

From: Foster, Kelly
Sent: Wednesday, April 17, 2013 10:41 AM

Ms. Power – Dr. Finkelhor (our Director) suggests that you write to Jurgen Barth for his meta-analysis. His email is:
Jürgen Barth (jbarth@ispm.unibe.ch).
Hope this helps.
Kelly

Kelly H. Foster, Senior Program Support Assistant for CCRC
Crimes against Children Research Center
University of New Hampshire
126 Horton Social Science Center
Durham, NH 03824
ph. (603)862-1888
Fax (603)862-1122
www.unh.edu/ccrc

Kristina Sesar

From: Kristina Sesar
Sent: 13th April 2013 18:38

Dear Christina,
In my studies I used Child Maltreatment Scales for Adults (Higgins, McCabe). This questionnaire is intended for retrospective study of childhood abuse. The definition of child sexual abuse that was used includes contact and non-contact sexual abuse. I dont have copy of reasarch instrument in english but I think that is possible to find it on internet. In attach you can find another article which can help you to see the items on subscales.
If you need additional information feel free to contact me.
Warm regards,
Kristina

Xiaoming Li and Danhua Lin

> 发件人: "Li, Xiaoming" <xiaoli@med.wayne.edu>
> 发送时间: 2013 年 4 月 14 日 星期日

Dear Ms. Power

Thank you for your interesting in our study on child sexual abuse in China. I cc my colleague Dr. Danhua Lin of Beijing Normal University to see whether she is able to provide you with the information you need.
Best regards and good luck with your research!
Xiaoming

Dear Ms. Power:

Thank you for your interest in our study. Please tell me the information you need (e.g., the contact and non-contact data among children aged 10-18 or else). Thanks.
Best,
Danhua Lin

Lorraine Radford From: Lorraine Radford [LRadford@uclan.ac.uk]
Sent: 09 December 2013 17:45

Hello Christina
I do have this information but it will take a while to put it together for you. I cannot do this until late December. Is 31s ok for you? There is some better data in the Child Abuse and Neglect journal which can be downloaded for free at present Radford, L. Corral, S. Bradley, C. & Fisher, H. (2013). The prevalence and impact of child maltreatment and other types of victimization in the UK: Findings from a population survey of caregivers, children and young people and young adults Child Abuse and Neglect 37:10, 801-813. http://dx.doi.org/10.1016/j.chiabu.2013.02.004
Lorraine

From: Lorraine Radford [LRadford@uclan.ac.uk]
Sent: 14 January 2014 11:51
Dear Christina,
Here are the results requested. The data was weighted so will not add up to 100%. The final row called any 'sexual abuse' includes contact and no contact. Some young people of course reported both contact and non-contact abuse. We did not calculate contact without penetration. The rates for the whole age group 11 to 17 years do not show that well the actual risks by age. We calculated the rates by actual age (year) and found that prevalence was low for under 13s and much higher at ages 14, 15, 16, 17 and that girls and boys rates differ more on gender lines for these older age groups, with less difference however for the non-contact sexual abuse. We gave a conference paper a while back to NOTA and I have some slides to show this age related change in prevalence. Let me know if you want them, Good luck with your research. Best wishes from Lorraine

From: Lorraine Radford [LRadford@uclan.ac.uk]
Sent: 14 January 2014 12:01
Hello again Christina
Here are the NOTA conference slides Best wishes from Lorraine

Sent: 19 January 2014 13:48
To: Lorraine Radford
Hello Christina
From the 2,275 11 to 17 year olds 1126 were male (49.5%) and 1149 were female (50.5%).These are the actual unweighted numbers. In the analysis we used weighted figures so that we can give UK population estimates. I do not remember using 13 to 17 year old figures separately in a journal article.

The number of 13 to 17 year olds would of course be less than 2,275. I hope this helps. Best wishes from Lorraine

Carl Göran Svedin

From: Carl Göran Svedin [carl.goran.svedin@liu.se]
Sent: 12 December 2013 09:10

Dear Christina I have attached a table from the 2003-2004 (published 2004) studie that was published in Child Abuse & Neglect 2008. I think I have added everything you need. There is a note under the table that is importent. In the study fråm 2009 (the main study is only in Swedish) we used exactly the same questions but changed the question that rendered that high prevalence figure since it was to unprecise. This table was rather easy to fix for me but corresponding table from the 2009 study takes a little bit more work to finish, but if you have time to wait I will send it to you and all the international publications that has been a result from it. I think it can be nice to include even that study since we used the same questions and age group. We also plan to perform a new survey in the autumn of 2014.

Best wishes and send my regards even to Ethel. If there is more information you need don't hesitate to contact me again.
Carl Göran

From: Carl Göran Svedin [carl.goran.svedin@liu.se]
Sent: 13 December 2013 09:23

Dear Christina, it's already in the table "contact abuse with penetration" is the cobined figures from "penetration" and "contact abuse without penetration"
Carl Göran

Dear Christina, in our paper we wrote: The
mean age of the participants was 18.15 years (SD = .74). In this study a subsample is used that consists of all participants who reported experience of sexual abuse and who answered to questions about disclosure of the abuse (n = 1,493, mean age 18.17 years, SD = .68).

When you are in the 12 grade you are supposed to be 18 years of age most are 18 but a few are 17 (fast learners) or 19 (slow learners or spent a year abroad). There are also some immigrants that also could be 20 years of age since the had learning gaps when they came to Sweden and were placed in a lower grade than expected by their chronological age.

I don't know if the information helps you but I have a little problem with recalculculating the data right now, excluding the few pupils that where older than 19. I would say that the range was 17-19 years of age.

Best wishes
Carl Göran Svedin

Meichun Mohler **From:** Meichun Mohler [Meichun.Mohler-Kuo@uzh.ch]
Sent: 19 December 10:18

Dear Mrs Power,
sorry for the delay.
The table was fine, except the total. Do you really need the total? We deliberately did not give the total because the boys in our sample is a little bit over-represented. Since the CSA rate is not the same between boys and girls. That's why the total cannot represent the total of Switzerland.
But if you need it, here is the number with confidence interval

For All,
penetration: lifetime 1.5[1.2-1.8] past year 1.0[0.8-1.2]
non-penetration: lifetime 9.7[8.8-10.7], past year 6.3[5.7-7.1]
non contact: lifetime 24.6[23.1-26.1], past year 16.9[15.6-18.2]
all, lifetime: 28.2 [26.7-29.8], Past year 19.6 [18.4-21.0]
best regards, meichun mohler

Appendix 3: Search strategy and reasons for exclusion

Table 6: Excluded publications from electronic databases and additional sources with reasons

Main reason for exclusion: Study identified issues related to methodology and type of population

Ackard, D. M., & Neumark-Sztainer, D. (2003). Multiple sexual victimizations among adolescent boys and girls: Prevalence and associations with eating behaviors and psychological health. *Journal of Child Sexual Abuse, 12*, 17-37.

Ahmad, S. (2006). Adult psychosexual dysfunction as a sequela of child sexual abuse. *Sexual & Relationship Therapy, 21*, 405-418.

Ahrens, K. R., Katon, W., McCarty, C., Richardson, L. P., & Courtney, M. E. (2012). Association between childhood sexual abuse and transactional sex in youth aging out of foster care. *Child Abuse and Neglect, 36*, 75-80.

Allnock, D., Radford, L., Bunting, L., Price, A., Morgan-Klein, N., Ellis, J., & Stafford, A. (2012). In demand: Therapeutic services for children and young people who have experienced sexual abuse. *Child Abuse Review, 21*, 318-334.

Armour, C., Elklit, A., & Christoffersen, M. N. (2014). A latent class analysis of childhood maltreatment: Identifying abuse typologies. *Journal of Loss & Trauma, 19*, 23-39.

Arreola, S. G., Neilands, T. B., Pollack, L. M., Paul, J. P., & Catania, J. A. (2005). Higher prevalence of childhood sexual abuse among Latino men who have sex with men than non-Latino men who have sex with men: Data from the urban men's health study. *Child Abuse & Neglect, 29*, 285-290.

Arreola, S. G., Ayala, G. D., Rafael, M. K., & Alex, H. (2013). Structure, agency, and sexual development of Latino gay men. *Journal of Sex Research, 50*, 392-400.

Arreola, S., Grant, N., Torsten B., & Dítaz, R. (2009). Childhood sexual abuse and the sociocultural context of sexual risk among adult Latino gay and bisexual men. *American Journal of Public Health, 99*, S432-S438.

Ashby, H. E. (2005). The ebony sex survey and the sex lives of African-American women: A call to healthcare providers. *Ethnicity & Disease, 15*, 40-44.

Baker, C. K., Norris, F. H., Jones, E. C., & Murphy, A. D. (2009). Childhood trauma and adulthood physical health in Mexico. *Journal of Behavioral Medicine, 32*, 255-269.

Bal, B. M., Rupa, M., Aiyel, H., Chakraborti, S., & Sarkar, K. (2010). Nontobacco substance use, sexual abuse, HIV, and sexually transmitted infection among street children in Kolkata, India. *Substance use & Misuse, 45*, 1668-1682.

Bal, S., Van Oost, P., De Bourdeaudhuij, I., & Crombez, G. (2003). Avoidant coping as a mediator between self-reported sexual abuse and stress-related symptoms in adolescents.

Child Abuse & Neglect, 27, 883–897.

Bebbington, P., Jonas, S., Brugha, T., Meltzer, H., Jenkins, R., Cooper, C. & McManus, S. (2011). Child sexual abuse reported by an English national sample: Characteristics and demography. *Social Psychiatry & Psychiatric Epidemiology, 46,* 255-262.

Bergen, H. A., Martin, G., Richardson, A. S., Allison, S., & Roeger, L. (2004). Sexual abuse, antisocial behaviour and substance use: Gender differences in young community adolescents. *Australian & New Zealand Journal of Psychiatry, 38,* 34-41.

Bhat, D. P., Singh, M., & Meena, G. S. (2012). Screening for abuse and mental health problems among illiterate runaway adolescents in an Indian metropolis. *Archives of Disease in Childhood, 97,* 947-51.

Bolen, R. M. (2003). Child sexual abuse: Prevention or promotion? *Social Work, 48,* 174-185.

Bolen, R. M., Winter, V. R., & Hodges, L. (2013). Affect and state dysregulation as moderators of the relationship between childhood sexual abuse and non-suicidal self-injury. *Journal of Interpersonal Violence, 28,* 201-228.

Bonomi, A. E., Cannon, E. A., Anderson, M. L., Rivara, F. P., & Thompson, R. S. (2008). Association between self-reported health and physical and/or sexual abuse experienced before age 18. *Child Abuse & Neglect, 32,* 693-701.

Bowman, K. G. (2007). When breastfeeding may be a threat to adolescent mothers. *Issues in Mental Health Nursing, 28,* 89-99.

Brabant, M., Hébert, M., & Chagnon, F. (2013). Identification of sexually abused female adolescents at risk for suicidal ideations: A classification and regression tree analysis. *Journal of Child Sexual Abuse: Research, Treatment, & Program Innovations for Victims, Survivors, & Offenders, 22,* 153-172.

Braitstein, P., Asselin, J. J., Schilder, A., Miller, M. L., Laliberté, N., Schechter, M. T., & Hogg, R. S. (2006). Sexual violence among two populations of men at high risk of HIV infection. *AIDS Care, 18,* 681-689.

Bramsen, R., Lasgaard, M., Koss, M., Elklit, A., & Banner, J. (2012). Adolescent sexual victimization: A prospective study on risk factors for first time sexual assault. *European Child & Adolescent Psychiatry, 21,* 521-526.

Brennan, D. J., Hellerstedt, W. L., Ross, M. W., & Welles, S. L. (2007). History of childhood sexual abuse and HIV risk behaviors in homosexual and bisexual men. *American Journal of Public Health, 97,* 1107-1112.

Briere, J., & Elliott, D. M. (2003). Prevalence and psychological sequelae of self-reported childhood physical and sexual abuse in a general population sample of men and women. *Child Abuse & Neglect, 27,* 1205-1222.

Brodsky, B. S., Mann, J. J., Stanley, B., Tin, A., Oquendo, M., Birmaher, B., & Brent, D. (2008). Familial transmission of suicidal behavior: Factors mediating the relationship between childhood abuse and offspring suicide attempts. *Journal of Clinical Psychiatry, 69,*

584-596.

Brown, E. J. (2005). Correlates and treatment of stress disorder in children and adolescents. *Psychiatric Annals, 35,* 759-765.

Burnette, M. L., Lucas, E., Ilgen, M., Frayne, S. M., Mayo, J., & Weitlauf, J. C. (2008). Prevalence and health correlates of prostitution among patients entering treatment for substance use disorders. *Archives of General Psychiatry, 65,* 337-344.

Buzi, R. S., Tortolero, S. R., Roberts, R. E., Ross, M. W., Addy, R. C., & Markham, C. M. (2003). The impact of a history of sexual abuse on high-risk sexual behaviors among females attending alternative schools. *Adolescence, 38,* 595-605.

Camilleri, J. A., & Quinsey, V. L. (2009). Individual differences in the propensity for partner sexual coercion. *Sexual Abuse: Journal of Research and Treatment, 21,* 111-129.

Cavanagh, M., Read, J., & New, B. (2004). Sexual abuse inquiry and response: A New Zealand training programme. *New Zealand Journal of Psychology, 33,* 137-144.

Chapman, D. P., Wheaton, A. G., Anda, R. F., Croft, J. B., Edwards, V. J., Liu, Y. & Perry, G. S. (2011). Adverse childhood experiences and sleep disturbances in adults. *Sleep Medicine, 12,* 773-779.

Christo, G., & Morris, C. (2004). Substance-misusers' anxiety and traumatic event prevalence. *Drugs: Education, Prevention & Policy, 11,* 35-47.

Clark, L., Holcombe, C., Hill, J., Krespi-Boothby, M. R., Fisher, J., Seward, J., & Salmon, P. (2011). Sexual abuse in childhood and postoperative depression in women with breast cancer who opt for immediate reconstruction after mastectomy. *Annals of the Royal College of Surgeons of England, 93,* 106-110.

Cluver, L., Orkin, M., Boyes, M., Gardner, F., & Meinck, F. (2011). Transactional sex amongst AIDS-orphaned and AIDS-affected adolescents predicted by abuse and extreme poverty. *Journal of Acquired Immune Deficiency Syndromes, 58,* 336-343.

Coid, J., Petruckevitch, A., Chung, W., Richardson, J., Moorey, S., & Feder, G. (2003). Abusive experiences and psychiatric morbidity in women primary care attenders. *British Journal of Psychiatry, 183,* 332-339.

Coker, A. L., Follingstad, D., Garcia, L. S., Williams, C. M., Crawford, T. N., & Bush, H. M. (2012). Association of intimate partner violence and childhood sexual abuse with cancer-related well-being in women. *Journal of Women's Health (15409996), 21,* 1180-1188.

Colangelo, J. J., & Keefe-Cooperman, K. (2012). Understanding the impact of childhood sexual abuse on women's sexuality. *Journal of Mental Health Counseling, 34,* 14-37.

Collings, S. J. (2002). The prevalence and characteristics of child sexual abuse among South African university students: Comments on S.N. Madu. *South African Journal of Psychology, 32,* 62.

Cox, L. J., Stanley, B. H., Melhem, N. M., Oquendo, M. A., Birmaher, B., Burke, A., …

Brent, D. A. (2012). Familial and individual correlates of nonsuicidal self-injury in the offspring of mood-disordered parents. *Journal of Clinical Psychiatry, 73*, 813-820.

Coxell, A. W. K., & Michael, B. (2010). Adult male rape and sexual assault: Prevalence, re-victimisation and the tonic immobility response. *Sexual & Relationship Therapy, 25*, 372-379.

Cyr, M., McDuff, P., & Wright, J. (2006). Prevalence and predictors of dating violence among adolescent female victims of child sexual abuse. *Journal of Interpersonal Violence, 21*, 1000-1017.

Dunne, M. P., Purdie, D. M., Cook, M. D., Boyle, F. M., & Najman, J. M. (2003). Is child sexual abuse declining? Evidence from a population-based survey of men and women in Australia. *Child Abuse & Neglect, 27*, 141-152.

Easton, S., Coohey, C.., O'leary, P., Zhang, Y, & Hua, L. (2011). The effect of childhood sexual abuse on psychosexual functioning during adulthood. *Journal of Family Violence, 26*, 41-50.

Eide, J., Hovengen, R., & Nordhagen, R. (2010). Childhood abuse and later worries about the baby's health in pregnancy. *Acta Obstetricia Et Gynecologica Scandinavica, 89*, 1523-1531.

Eisenberg, M. E., Ackard, D. M., & Resnick, M. D. (2007). Protective factors and suicide risk in adolescents with a history of sexual abuse. *Journal of Pediatrics, 151*, 482-487.

Elliott, D. M., Mok, D. S., & Briere, J. (2004). Adult sexual assault: Prevalence, symptomatology, and sex differences in the general population. *Journal of Traumatic Stress, 17*, 203-211.

Elwood, L. S., Smith, D. W., Resnick, H. S., Gudmundsdottir, B., Amstadter, A. B., Hanson, R. F., … Kilpatrick, D. G. (2011). Predictors of rape: Findings from the national survey of adolescents. *Journal of Traumatic Stress, 24*, 166-173.

Engstrom, M., El-Bassel, N., Go, H., & Gilbert, L. (2008). Childhood sexual abuse and intimate partner violence among women in methadone treatment: A direct or mediated relationship? *Journal of Family Violence, 23*, 605-617.

Eskin, M., Kaynak-Demir, H., & Demir, S. (2005). Same-sex sexual orientation, childhood sexual abuse, and suicidal behavior in university students in turkey. *Archives of Sexual Behavior, 34*, 185-195.

Eslick, G. D., Koloski, N. A., & Talley, N. J. (2011). Sexual, physical, verbal/emotional abuse and unexplained chest pain. *Child Abuse & Neglect, 35*, 601-605.

Figueiredo, B., Bifulco, A., Paiva, C., Maia, A., Fernandes, E., & Matos, R. (2004). History of childhood abuse in Portuguese parents. *Child Abuse and Neglect, 28*, 669-682.

Fletcher, J. (2010). The effects of intimate partner violence on health in young adulthood in the United States. *Social Science and Medicine, 70*, 130-135.

Firth, M. T. (2012). *100 psychosexual therapy clients: A complex specialism* Routledge.

Freyd, J., Putnam, F. W., Lyon, T. D., Becker-Blease, K. A., Cheit, R. E., Siegel, N. B., & Pezdek, K. (2005). The science of child sexual abuse. *Science, 308*, 501-501.

Fricker, A. E., Smith, D. W., Davis, J. L., & Hanson, R. F. (2003). Effects of context and question type on endorsement of childhood sexual abuse. *Journal of Traumatic Stress, 16*, 265.

Gal, G., Levav, I., & Gross, R. (2011). Psychopathology among adults abused during childhood or adolescence: Results from the Israel-based world mental health survey. *Journal of Nervous and Mental Disease, 199*, 222-229.

Garabedian, M. J., Lain, K. Y., Hansen, W. F., Garcia, L. S., Williams, C. M., & Crofford, L. J. (2011). Violence against women and postpartum depression. *Journal of Women's Health, 20*, 447-453.

Ghetti, S., Edelstein, R. S., Goodman, G. S., Cordon, I. M., Quas, J. A., Alexander, K. W., & Jones, D. P. (2006). What can subjective forgetting tell us about memory for childhood trauma? *Memory and Cognition, 34*, 1011-1025.

Goodwin, R. D., & Stein, M. B. (2004). Association between childhood trauma and physical disorders among adults in the United States. *Psychological Medicine, 34*, 509-520.

Gwirayi, P. (2013). The prevalence of child sexual abuse among secondary school pupils in Gweru, Zimbabwe. *Journal of Sexual Aggression, 19*, 253-263.

Hadland, S. E., Marshall, B. D. L., Kerr, T., Qi, J., Montaner, J. S., & Wood, E. (2012). Suicide and history of childhood trauma among street youth. *Journal of Affective Disorders, 136*, 377-380.

Haller, D. L. M., & Donna, R. (2004). Personality disturbances in drug-dependent women: Relationship to childhood abuse. *American Journal of Drug & Alcohol Abuse, 30*, 269-286.

Hanson, R. F., Kievit, L. W., Saunders, B. E., Smith, D. W., Kilpatrick, D. G., Resnick, H. S., & Ruggiero, K. J. (2003). Correlates of adolescent reports of sexual assault: Findings from the national survey of adolescents. *Child Maltreatment, 8*, 261-272.

Hauser, W., Bohn, D., Kuhn-Becker, H., Erdkonig, R., Brahler, E., & Glaesmer, H. (2012). Is the association of self-reported childhood maltreatments and adult fibromyalgia syndrome attributable to depression? A case control study. *Clinical and Experimental Rheumatology, 30*, 59-64.

Hébert, M., Lavoie, F., Vitaro, F., McDuff, P., & Tremblay, R. E. (2008). Association of child sexual abuse and dating victimization with mental health disorder in a sample of adolescent girls. *Journal of Traumatic Stress, 21*, 181-189.

Hébert, M., Tourigny, M., Cyr, M., McDuff, P., & Joly, J. (2009). Prevalence of childhood sexual abuse and timing of disclosure in a representative sample of adults from Quebec. *Canadian Journal of Psychiatry, 54*, 631-636.

Herrera, C. R., & Parra, A. F. (2011). Abuso sexual infantil: Una revisión con base en pruebas empíricas [Child sexual abuse: An evidence-based review]. *Behavioral Psychology / Psicología Conductual: Revista Internacional Clínica y De La Salud, 19*, 7-39.

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Mohler-Kuo, M., Landolt, M. A., Maier, T., Meidert, U., Schonbucher, V., & Schnyder, U. (2014). Child sexual abuse revisited: A population-based cross-sectional study among Swiss adolescents. *Journal of Adolescent Health, 54,* 304-311.

Perera, B., & Østbye, T. (2009). Prevalence and correlates of sexual abuse reported by late adolescent school children in Sri Lanka. *International Journal of Adolescent Medicine and Health, 21,* 203-211.

Pineda-Lucatero, A., Trujillo-Hernández, B., Millán-Guerrero, R., & Vásquez, C. (2009). Prevalence of childhood sexual abuse among Mexican adolescents. *Child: Care, Health & Development, 35,* 184-189.

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Stoltenborgh, M., van IJzendoorn, M. H., Euser, E. M., & Bakermans-Kranenburg, M. J. (2011). A global perspective on child sexual abuse: Meta-analysis of prevalence around the world. *Child Maltreatment, 16,* 79-101.

Yen, C. F., Yang, M. S., Yang, M. J., Su, Y. C., Wang, M. H., & Lan, C. M. (2008). Childhood physical and sexual abuse: Prevalence and correlates among adolescents living in rural Taiwan. *Child Abuse & Neglect, 32,* 429-438.

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Appendix 4: Data extracted from included studies

Table 9 shows key characteristics and descriptive information included within the studies

(a) Reference	(b) Data source	(c) Publish	(d) Data collection	(e) Total no. of sample	(f) Mean age of sample	(g) Population	(h) Method data collection	(i) Sampling frame	(j) Measure of CSA
1. Chan et al., 2013 China RR: 95.8%	Peer-reviewed Journal article	2013	November 2009 to July 2010	18,341 Males: 9,773 (53.3%); Females: 8568 (46.7%)	15–17yrs. Mean age: 15.86 yrs. *sd*=0.97	Students	Self-report survey Questionnaire	2-staged stratified sampling; Grades 9-12, 150 random sampled schools in 6 Chinese cities	CSA assessed by sexual victimization: Module of the Chinese version of JVQ (Finkelhor et al., 2005)
2. Chen et al., 2004 China RR: 70.5%	Peer-reviewed Journal article	2004	2002	2,300 Female: 1155 (50.2%); Male: 1145 (49.8%)	16-19 Mean age: 17.2 yrs. Female: 17; Male 17.3.	Students	Self-report survey Questionnaire	Cross sectional survey convenience sample (3 secondary school: grade 11; 76.2%; 1 technical school grade 11-12, 23.8% in four Chinese provinces	Based on items in published surveys (Chen et al., 2002; Chen et al., 2003; Dunne et al., 2003). CSA: 1 or more of 12 questions relating to CSA before 16 against will.

3. Chen et al., 2006 China RR:75%	Peer-reviewed Journal article	2006	June 2004	351 Females 100%	16-19 yrs. (94.9%); Mean 17.6 yrs.	Students	Self-report survey Questionnaire	Cross sectional survey, convenience sample of students in central China province of Henan	Questionnaire based on items in published surveys (e.g. Chen et al., 2002; Chen et al., 2003). 1 or more questions relating to CSA before 16 (against will).
4. Lin et al., 2011 China RR: NR	Peer-reviewed Journal article	2011	2009	683; Females: 346; Males: 326	10-18 yrs.	Community	Self-report survey (questionnaire)	Cross sectional survey Hunan province Central China; Multiple stage sampling of rural children adolescents	CSA scale (Chen et al 2004; 2006). Non-contact (3) Physical contact (9); Any CSA (12
5. Helweg-Larsen et al., 2006	Peer-reviewed Journal article	2006	2002	5829 (94%; 2910 boys and 2918	Aged 15-16yrs. (97% 15-16; 1% <	Students	Multimedia computer-based self-administered	Random sample 183 schools representing	Modified version of JVQ (Hamby, 2004): 14

Denmark RR: NR				girls)	15; 2% >16 yrs.)		Interviews (M-CASI)	all regions of Denmark: 7241students in 9th grade classes	questions on sexual experience.
6. Pineda-Lucatero 2008 Mexico RR: 89.1%	Peer-reviewed Journal article	2008	January to December 2002	1067 Males: 45.9%, n=490; Females: 65.1% n=577	11-20 yrs.; Mean=13. ± 1.1 yrs.	Students	Self-report survey (questionnaire)	Cross sectional survey in Junior high school	No validated measure: Sexual abuse with physical contact (4 Q's) Sexual abuse, physical contact (6)
7. Priebe & Svedin 2008 Sweden RR: 77.2%	Peer-reviewed Journal article	2009	2003	4,339 Females: 2,324 Males: 2,015 males	Mean age 18.15 (*sd* = 0.74)	Students	Self-report survey (questionnaire)	Population-based study (*part of Swedish base for Comparative studies under the aegis of the Baltic Sea Regional Study on adolescent sexuality- 4 cities in Sweden)*	Norwegian survey of young people's attitudes to sexuality and sexual abuse (Mossige, 2001) other Nordic surveys, study specific questions CSA adult and peer offenders

8. Radford 2011 UK RR: 60.4%	Report and Peer-reviewed journal article	2011	March to December 2009	2,275 Male: 1126 (49.5%); Females: 1149 (50.5%)	11 – 17 yrs. Mean =13.96 yrs.; *sd*=1.98)	Community	Multimedia computer-based self-administered Interviews (M-CASI)	Random probability sample of UK population	Sexual victimisation module on JVQ (Hamby et al., 2004). Contact CSA (5 items); non-contact (2 items)
9. Mohler-Kuo 2013 Switzerland RR:NR	Peer-reviewed Journal article	2013	September 2009 – May 2010	6,787 Male: 3551 (52.1(50.9-53.4); Female: 3236 (47.9(46.6-49.1).	13-20 yrs. 15.5± .66 yrs. 97% 14-16.9 yrs.	Students	Self-report survey - computer assisted questionnaire on laptop	Population survey - stratified target sample; Seven great regions an d 26 Cantons of Switzerland (9^{th} grade (10,092), 560 classes, 228 schools; actual: 6,841; 177 schools – 449 classes	Child Sexual Abuse Questionnaire (CSAQ) based on previous measures (Halperin et al 1996; JVQ); 15 items: CSA without physical contact (8), CSA with physical contact (7).

Appendix 4 continued

Table 10 shows the prevalence data extracted from the included studies

Reference	(k) Type of prevalence *(lifetime prevalence)*	(l) Prevalence as reported overall, and across gender and type of abuse		
		Male	Female	Total
		% (n) [CI]	% (n) [CI]	% (n) [CI]
1. Chan et al., 2013	Lifetime prevalence	n=9773	n=8568	n = 18,341
China	Contact sexual abuse	6.1%	4.1%	5.2%
RR: 95.8%	Penetration	5.5%	3.2%	4.4%
	Non-penetrative touching	5.0%	3.4%	4.2%
	Non-contact sexual abuse	8.1%	5.4%	6.8%
	Overall lifetime			8%
2. Chen et al., 2004	Any type of CSA one or more times before 16 years of age	1145 (120)	1155 (193)	2300 (313)
China		10.5%	16.7%	13.6%
RR: 70.5%	Overall non-contact CSA experiences	12.9%	8.8%	10.9%
	Exposed their genitals to the child	8.7 %	5.1 %	16.9%
	Masturbated in front of the child	4.2 %	4.6%	4.4%
	Tried to sexually arouse the child	4.5 %	3.1%	3.8%
	Overall physical-contact experiences	8.9%	5.0%	7.0%
	Touched or fondled child's body including breast, or genitals	6.5%	2.8%	4.7%
	Made child arouse them and touch their body in a sexual way	0.9 %	1.6%	1.2%
	Rubbed their genitals against child's body in a sexual way	1.4 %	1.4 %	1.4%
	Touched child's genitals with their mouth	0.3 %	0.4%	0.4%
	Made child touch their genitals with child's mouth	0.3 %	0.8%	0.6%
	Tried to have intercourse with child	2.3 %	1.6%	2.0%
	Had intercourse with child	0.3 %	0.1%	0.2%
	Tried to have anal intercourse with child	0.2 %	0.6%	0.4%
	Had anal intercourse with child	0.1%	0.3%	0.2%

3. Chen et al., 2006	Overall prevalence: any form of CSA	-	21.9% (77)	21.9% (77)
China	(physical and non-physical contact one or more before 16)	-		
RR:75%	Non-physical contact (at least once)	-	17.4% (61)	17.4% (61)
	Exposed genitals to child	-	12.3% (43)	12.3% (43)
	Masturbated in front of child	-	6.8% (24)	6.8% (24)
	Tried to sexually arouse the child	-	8.8% (31)	8.8% (31)
	Physical contact (at least once)	-	14% (49)	14% (49)
	Touched or fondled child's body including breast or genitals	-	9.1% (32)	9.1% (32)
	Made child arouse them and touch their body in a sexual way	-	3.4% (12)	3.4% (12)
	Rubbed genitals against child's body in a sexual way	-	4.6% (16	4.6% (16
	Touched child's genitals with their mouth	-	1.4% (5)	1.4% (5)
	Made child touch their genitals with child's mouth	-	0.9% (3)	0.9% (3)
	Tried to have intercourse with child	-	5.4% (19)	5.4% (19)
	Had intercourse with child	-	2.6% (9)	2.6% (9)
	Tried to have anal intercourse with child	-	0.3%(1)	0.3%(1)
	Had anal intercourse with child		0.3% (1)	0.3% (1)
4. Lin et al., 2011	Any CSA (at least once) before 16	21.5% (70)	14.2% (49)	18% (123)
China	Non-contact CSA	7.7% (25)	5.5% (19)	6.6% (45)
RR: NR	Contact CSA	2.2% (7)	1.7% (6)	2.0% (14)
	Both contact and non-contact CSA	11.7% (38)	6.9% (24)	9.4% (64)
5. Helweg-Larsen	All cases of CSA: unlawful sexual experiences before 15 with	Male 2910	Female2918	Total 5829
et al., 2006	persons older than 15	6.7% (195)	15.8% (462)	11.3% (657)
Denmark	All contact CSA*	5.74% (167)	14.7% (430)	10.2% (597)
RR: NR	No physical contact	1.0% (28)	1.09% (32)	1.01% (60)
	Physical contact, but not intercourse	1.51% (44)	5.1% (161)	3.51% (205)
	Attempted or completed intercourse	4.2% (123)	9.21% (269)	6.72% (392)

6. Pineda-Lucatero et al., 2008 Mexico RR: 89.1%	Overall CSA prevalence (LT)	17.3% (85)	19.9% (115)	18.7% (200)
	Contact sexual abuse	17.3%	11.3%	14.7%
	Non-contact sexual abuse	0%	8.7%	4.7%
	SA with physical contact	100% (85)	52.5% (65)	75% (150)
	Oral penetration	NR	NR	40.7% (61)
	Vaginal penetration	NR	NR	26% (39)
	Anal penetration	NR	NR	20% (30)
	Other forms including fondling of the mouth breasts or genital	NR	NR	13.3% (20)
	SA without physical contact	NR	NR	25% (50)
	Lascivious comments	NR	NR	54% (27)
	Use of pornographic material	NR	NR	26% (13)
	Voyeurism	NR	NR	16% (8)
	Masturbation in front of the child	NR	NR	2% (4)
7. Priebe & Svedin 2008 Sweden RR: 77.2%	All sexual abuse	22.7% (457)	64.8% (1505)	45.2% (1962) 39.8% (1728) 30.1% (1304) 9.8% (424) 5.4% (234)
	Contact sexual abuse with penetration*	18.5% (373)		
	Contact sexual abuse without penetration	13.0% (262)	58.3% (1355)	
	Penetrating sexual abuse	5.5% (111)		
	Non-contact sexual abuse	4.2% (84)	44.8 (1042) 13.5% (313) 6.5% (150)	
8. Radford et al., 2011 UK RR: 60.4%	Contact sexual abuse (LT)	2.8% (32)	7.2% (83)	5.1% (115)
	Penetration	0.2% (1)	1.7% (14)	0.9% (16)
	Non-penetrating	NR	NR	NR
	Non-contact sexual abuse (LT)	10.9% (97)	18.5% (156)	14.6% (115)
	Any Sexual abuse (including non-contact offences)	12.5% (111)	20.8% (175)	16.5% (285)
	Contact sexual abuse (PY)	1.3% (15)	2.9% (33)	2.1% (48)
	Penetration	0.1% (1)	0.8% (6)	0.4% (7)
	Non-penetrating	NR	NR	NR
	Non-contact sexual abuse (PY)	6% (53)	1.3% (95)	8.6% (148)
	Any Sexual abuse (including non-contact offences)	6.8% (60)	12.2% (102)	9.4% (163)
9. Mohler-Kuo et	Contact CSA (LT)	5.1% (178) [4.2-	15.6% (495)	10.1%(673)

al., 2014		6.1]	[14.0-17.4]	[9.2-11.1]
Switzerland	Penetration	0.6% (21) [0.4-	2.5% (86)	1.5% [1.2-
RR:NR		0.9]	[2.0-3.0]	1.8]
	Non-penetrating	4.8% (170) [4.0-	14.9% (472)	9.7[8.8-10.7]
		5.8]	[13.3-16.7]	
	Non-contact	14.9% (530)	35.1%	24.6[23.1-
		[13.5-16.3]	(1127) (32.7-	26.1] (1657)
	Any type of CSA	17.2% (610)	37.5)	28.2 [26.7-
		[15.7-18.8]	40.2%	29.8]
	Contact CSA (PY)	3.6%	(1282)	6.7% (444)
		(126) [2.9-4.4]	[37.9-42.6]	[6.0-7.4]
			10.1%	
	Penetration	0.5% (17) (0.3-	(318), [8.9-	1.0[0.8-1.2]
		0.8)	11.3]	
	Non-penetrating	3.3% (118) [2.7-	1.5% (52)	6.3[5.7-7.1]
		4.1]	(1.1-2.0)	
	Non-contact	11.1% (390)	9.6% (302)	16.9[15.6-
		[10.0-12.3]	(8.5-10.9)	18.2] (1135)
	Any type of CSA	12.8% (449)	23.1% (745)	19.6 [18.4-
		[11.6-14.1]	[21.2-25.2]	21.0]
			27.1% (867)	
			[25.1	

Appendix 5: Quality Assessment criteria

Table 11: STROBE Statement—checklist of items to be included in reports of observational studies

Description	Item No	Recommendation
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract (*b*) Provide in the abstract an informative and balanced summary of what was done and what was found
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported
Objectives	3	State specific objectives, including any prespecified hypotheses
Methods		
Study design	4	Present key elements of study design early in the paper
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group
Bias	9	Describe any efforts to address potential sources of bias
Study size	10	Explain how the study size was arrived at
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding (*b*) Describe any methods used to examine subgroups and interactions (*c*) Explain how missing data were addressed (*d*) If applicable, describe analytical methods taking account of sampling strategy (*e*) Describe any sensitivity analyses

Results		
Participants	13*	(a) Report numbers of individuals at each stage of study—e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed
		(b) Give reasons for non-participation at each stage
		(c) Consider use of a flow diagram
Descriptive data	14*	(a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders
		(b) Indicate number of participants with missing data for each variable of interest
Outcome data	15*	Report numbers of outcome events or summary measures
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included
		(*b*) Report category boundaries when continuous variables were categorized
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	17	Report other analyses done—e.g. analyses of subgroups and interactions, and sensitivity analyses
Discussion		
Key results	18	Summarise key results with reference to study objectives
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence
Generalisability	21	Discuss the generalisability (external validity) of the study results
Other information		
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Appendix 6: Quality Criteria Ratings according to STROBE

Table 12 shows the agreed ratings of STROBE assessment of reporting quality

STROBE item		Study first author								
		Chan et al., 2013	Chen et al., 2004	Chen et al., 2006	Lin et al., 2011	[illegible] 2006	Pineda-Lucatero et al., 2009	Priebe & Svedin 2008	Radford et al., 2011	Mohler-Kuo et al., 2014
1a	Title	0	0	0	0	0	0	2	2	2
1b	Abstract	1	2	2	2	1	1	2	2	2
2	Background/ Rationale	1	2	1	1	1	1	2	2	2
3	Objectives	2	2	1	2	1	1	2	2	2
4	Study design	1	2	1	2	1	1	1	2	1
5	Setting	1	1	1	2	1	1	2	2	2
6a	Participants	2	2	1	2	2	1	2	2	1
7	Variables	1	1	1	2	1	1	2	2	2
8	Data sources/measure	2	2	2	2	2	1	2	2	2
9	Bias	0	0	0	0	1	0	0	2	1
10	Study size	2	1	0	1	1	1	1	2	1
11	Quantitative variables	0	1	1	2	1	1	0	2	2
12a	Statistical methods	0	1	1	2	1	2	0	2	2
12b	Subgroups and interactions	0	1	0	0	1	2	0	2	1
12c	Missing data	0	1	1	1	1	1	0	2	1
12d	Sampling strategy	2	1	0	1	1	1	0	2	2
13a	Participants	0	2	2	2	2	2	2	2	2
13b	Reasons for non-participation	0	1	0	0	1	1	0	2	2
13c	Flow diagram	0	0	0	0	1	1	1	2	1
14a	Descriptive data	1	2	1	2	0	1	2	2	1
14b	Missing data for each variable of interest	0	0	0	2	0	0	2	2	0
15	Outcome data	2	2	2	2	2	2	2	2	2
16a	Main results	2	2	2	2	2	2	2	2	2
17	Other analyses	1	1	1	2	1	2	2	2	1
18	Key results	1	2	2	2	2	2	2	2	2
19	Limitations	0	2	2	2	1	1	2	2	1
20	Interpretation	1	2	2	1	1	2	2	2	1
21	Generalisability	1	1	1	1	1	1	2	2	2
22	Funding	2	2	2	0	2	0	2	2	2

Appendix 6 continued

Table 13 shows the independent and agreed rating scores on each PRISMA item for each meta-analysis with comments

STUDY AUTHOR: Lin, D., Li, X., Fan, X., & Fang, X. (2011)
STUDY TITLE: Child sexual abuse and its relationship with health risk behaviours among rural children and adolescents in Hunan, China.

STROBE	Item No	Recommendation	Page	Notes	Score
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	680	Doesn't specify study design. Did not state the type/design of the study that was used. i.e. a cross sectional study in Henan Province, China	0 0
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found		Did not meet criteria.	0 0
Introduction					
Background/ rationale	2	Explain the scientific background and rationale for the investigation being reported	680 / 681	Methodological / conceptual constraints not detailed. Discussion heavily weighted towards research by Chen, J. Without having a broad understanding of the available Chinese research, hard to determine if this indicates bias or not, but there is a lack of criticality in examining studies and mostly reports prevalence results and hypothesized reasons for these. Provided limited relevant information related to the context to the study with some key recent references to support rational, however this was specifically based on previous work (Chen et al).	1 1

Objectives	3	State specific objectives, including any prespecified hypotheses	681	Clear objectives but wider than methodology allows. Identified a need for CSA research in China and to explore any association with health risk behaviours. Specific and clear with reference to two main research questions however not within the scope of the paper and methodology used.	1 1
Methods					
Study design	4	Present key elements of study design early in the paper	682	Design described, but not randomized and a very small sample of total population. Provided key elements of the study design early in the methods section, i.e. details of how the data were derived from a cross sectional study and the population under study, using a multi-stage sampling scheme to recruit rural children Significant detail provided.	1 1
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	682	Dates not given, settings given but methodology for village choice not systematic. Details of the setting did not appear well covered. Not clearly stated where the questionnaire was completed by the participant – in the community and reference to a room but unclear. Also some uncertainty regarding the dates of data collection and how the questionnaires were anonymised.	1 1
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls	682	8-18, had permanent rural residency, but sources and methods of recruitment not random. Not exactly clear what the outreach strategies were and there were no figures for gender split in the sample and little	1 1

		Cross-sectional study—Give the eligibility criteria, and the sources and methods of selection of participants		information regarding randomisation ("about 30 refused" pg. 682)	
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case		NA	
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	682	Clearly reported. Reported - health related behaviour variables were defined and outcome identified as prevalence of CSA.	2 2
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group		Questionnaire and method of delivery detailed. Measures used seemed appropriate to the study question and existing scales were used where possible (some well validated measures included) - details included	2 2
Bias	9	Describe any efforts to address potential sources of bias	681 /682	No discussion of measures taken to address bias in methods. No explicit mention of bias or assessment of the likelihood of relevant bias (direction and magnitude of potential bias not discussed or estimated).	0 0
Study size	10	Explain how the study size was arrived at	681 /682	No clear rationale for study size given and methods seemed non-systematic, with small sample relative to target population. In the sampling and participants section authors discuss the population and the data provided were derived from a cross sectional survey in Hunan province in central China, describe a multi-stage sampling scheme outlined districts and geographical areas addressed. There appeared to be little discussion or formal sample size calculation	0 0

Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	683 / 684	Clear. Authors specified the demographic characteristics and explained how variables were measured. Further detail would be helpful.	2 1
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	683	Lacking detail of analyses: i.e. whether consideration of sampling methodology was included in treatment of data. Doesn't specify which programme was used. Appeared to be lacking in detail related to analyses of data or the programme used	1 1
		(*b*) Describe any methods used to examine subgroups and interactions	683	Clear. Reported the test and analyses used and regression model, adjusted odds ratio (aOR) and their 95% confidence intervals.	2 2
		(*c*) Explain how missing data were addressed	682	Not much missing data in terms of invalid questionnaires, but methodology for addressing it not detailed, and number of missing individual responses within included questionnaires not given. Seventeen (2.4%) questionnaires excluded from the final set due to large amount of missing data, more than one third of the items. No further explanation regarding any further analysis of the missing data figures or why the figure one third was used. No mention of how those under one third treated i.e. whether they were replaced or the values for each variable of interest	1 1
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods	681 /682	Sampling strategy neither systematic nor random and no discussion of any adjustments made. Not reported clearly	0 0

		taking account of sampling strategy (*e*) Describe any sensitivity analyses			
Results					
Participants	13*	(a) Report numbers of individuals at each stage of study—e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	681	Number of potentially eligible participants was huge, and no discussion of whether or not sample was designed to be representative of this group or not: i.e. those in education or not, etc...Once sample set, data given regards dropout. Reported number of participants overall and across gender. However as it was a multi-stage sampling design more information on participants would be helpful i.e. representativeness of the sample.	1 1
		(b) Give reasons for non-participation at each stage	681	30 refused but reasons not given, prior to this assessment for eligibility very vague. There were 30 participant refusals however there was no information stating the reasons, and the eligibility criteria was broad and not explicit to the reader.	0 0
		(c) Consider use of a flow diagram	682	Flow would have helped legibility. Would have been beneficial to include a flow.	1 1
Descriptive data	14*	(a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders	682	Tripartite economic status not objectively comparable: a relative measure by village and also subjective and sensitive to bias. Reported on the demographic characteristics of the sample although no explicit mention of information pertaining to exposures and potential confounders.	1 1

		(b) Indicate number of participants with missing data for each variable of interest	683 / 685	Not given. Not provided	0 0
		(c) *Cohort study*—Summarise follow-up time (e.g., average and total amount)	NA		NA
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time	683 / 685	Yes. Reported any CSA, non-contact and contact	2 2
		Case-control study—Report numbers in each exposure category, or summary measures of exposure *Cross-sectional study*—Report numbers of outcome events or summary measures			
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included	683 & 685	There were adjusted odds ratios reported but without unadjusted data	1 1
		(*b*) Report category boundaries when continuous variables were categorized	683	These were provided for health risk behaviours	2 2
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA		NA
Other analyses	17	Report other analyses done—e.g. analyses of subgroups and interactions, and sensitivity analyses	683 / 685	All analyses seem to be reported fully. Although limited, the analyses conducted appeared to be reported	2 2
Discussion					
Key results	18	Summarise key results with reference to study objectives	685 / 686	Yes. Clear summary of findings linked to the study objectives.	2 2
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of	685 / 686	Discussion of limitations included and linked potential bias. Highlighted limitations	2

		any potential bias		of a cross-sectional design which limits ability to examine causal relationship between CSA and health risk behaviours.	2
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	685 / 686	Clearly reported. Findings were discussed in the context of previous research, particularly focussed on Chinese studies. Sparse attention to ethical concerns regarding conducting research on sensitive topics in young people. No mention of the precautions or additional briefing given the nature of the study.	2 1
Generalisability	21	Discuss the generalisability (external validity) of the study results	685 / 686	Acknowledges the limitations in generalizability. Some discussion provided mostly in relation to China.	2 2
Other information					
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based		No information about funding or interests. Not provided - funding or interests.	0 0

Appendix 6 continued

Table 14 shows the independent and agreed rating scores on each PRISMA item for each meta-analysis with comments

STUDY AUTHOR: Mohler-Kuo, M., Landolt, M. A., Maier, T., Meidert, U., Schonbucher, V., & Schnyder, U. (2014)
STUDY TITLE: Child Sexual Abuse Revisited: A Population-Based Cross-Sectional Study Among Swiss Adolescents

STROBE	Item No	Recommendation	Page	Notes	Score
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1	Specifies study design. Fully met	2 2
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	1	Query whether 'balanced' e.g. 'confirms' and 'suggests' but otherwise good. Fully met (although should note it could have been more balanced, no reference to potential bias).	2 2
Introduction					
Background/ Rationale	2	Explain the scientific background and rationale for the investigation being reported	1-2	Good, well referenced. Provided information and context for study and a wide of range of empirical references and research studies were included to support argument.	2 2
Objectives	3	State specific objectives, including any prespecified hypotheses	2	Clear. Did identify a gap in the literature and an argument to support a study in this area based on a previous study. Appeared relatively specific and clear	2 2

				(although no reference to hypotheses and no suggestion of how the research would be useful).	
Methods					
Study design	4	Present key elements of study design early in the paper	2	Doesn't detail randomisation methodology. Provided details of the study within the method section for example an epidemiological study with adolescents, using stratified sampling design. Even so, there were no details regarding the random selection of classes.	1 1
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	2	Clear. Details of the setting appeared well covered in terms of methodology and referred reader to primary paper for a fuller explanation of the study design and procedure.	2 2
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	2	Clear. Provided details of participants and the schools approached; however, a minor point being that there were no figures for gender split in the sample and little on randomisation.	2 1
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case	NA		NA

Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	3	Satisfactorily described. Variables defined and outcome as prevalence relatively clearly.	2 2
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	2-3	Questionnaire and method of delivery detailed. Measure developed for the study which was positive and informed by authors working in the field and items were piloted.	2 2
Bias	9	Describe any efforts to address potential sources of bias	2-3	Selection bias but nothing else. Did acknowledge that internal consistency reliability has been questioned for the assessment of life events. Reference to reduction of selection bias however no further explicit mention of other types of bias (or attrition bias).	1 1
Study size	10	Explain how the study size was arrived at	2	Clear and detailed description of attempts to ensure representative sample, but not why sample size was set as it was. Sample was recruited from schools which aimed to acquire a nationally representative sample of students in Switzerland. Explained number of school and locality (stratified sample) however vague discussion regarding how they got the number of schools included or those available.	1 1
Quantitative	11	Explain how quantitative variables were handled in the analyses. If applicable,	3	Clear methods. Clearly stated	2

variables		describe which groupings were chosen and why		differences in prevalence between males and females and calculated odds ratios to assess association between sociodemographic characteristics and three categories of CSA.	2
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	3	Brief but clear. Appeared to be described in a way to replicate	2 2
		(*b*) Describe any methods used to examine subgroups and interactions	3-5	Brief but clear. Did report but sparse reporting	2 1
		(*c*) Explain how missing data were addressed	3	Missing data due to selection bias addressed in methods, but the extent / pattern of missing data due to unanswered questions not clear so not clear if statistical treatment accounted for this. % of refusals low, but same issue. Not addressed clearly although noted previously that student absences on the day of the survey were (537) and refusals (63) yielded 6,841 completed questionnaires. No explanation regarding the nature of the computer problems or missing data figures.	1 1
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking	3	Yes. Stratified sampling.	2 2

		account of sampling strategy (*e*) Describe any sensitivity analyses	NA		NA
Results					
Participants	13*	(a) Report numbers of individuals at each stage of study—e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	2-3	Clear. Reported number of participants overall and across gender.	2 2
		(b) Give reasons for non-participation at each stage	2-3	Clear. Provided	2 2
		(c) Consider use of a flow diagram	2	Flow would have helped legibility.	1 1
Descriptive data	14*	(a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders	3-5	Could other socio-demographic factors have been considered relevant? Reported Sociodemographic characteristics of study participants. Provided details of characteristics of CSA more discussion would have been helpful.	1 1
		(b) Indicate number of participants with missing data for each variable of interest	3	Not detailed. No evidence to support	0 0
		(c) *Cohort study*—Summarise follow-up time (e.g., average and total amount)	NA		NA
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time	4	Yes Did report CSA outcome for CSA contact and non-contact but did not provide an overall contact figure. Also did not provide an overall contact and non-contact	2 2

				figure (contacted the author who explained the reason for this).	
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	4	No clear confounders	2
		Cross-sectional study—Report numbers of outcome events or summary measures	NA		NA
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included	4	No clear confounders. Clear. A detailed table was provided which provided these figures	2 2
		(*b*) Report category boundaries when continuous variables were categorized	NA		NA
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA		NA
Other analyses	17	Report other analyses done—e.g. analyses of subgroups and interactions, and sensitivity analyses	5	Assumed but not clear that all variables treated with both univariate and multiple regression analyses. Authors provided details in a table of results and explained CI and odds ratio. No mention of a sensitivity analysis. Assumed although not clear whether all variables were treated with both univariate and multiple regression analyses.	1 1
Discussion					6-7
Key results	18	Summarise key results with reference to study objectives	6	Yes. Provided a clear discussion linking to previously stated objectives for the study and comparing to previous research.	2 2
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or	6-7	Possible direction and magnitude	1

		imprecision. Discuss both direction and magnitude of any potential bias		of bias not discussed. Discussion of limitations included and linked potential bias. Some further discussion may have been helpful regarding bias.	1
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	6-7	Not clearly reported to what extent higher relative odds ratios in regression analyses could be an artefact of large sample size and multiple comparisons (Type 1 errors). Could have been more discussion regarding comparison of findings to worldwide prevalence studies and how these compare. Also, results and discussion could be more explicit regarding bias and type 1 errors.	1 1
Generalisability	21	Discuss the generalisability (external validity) of the study results	6-7	Issues around generalisabilty clearly outlined. Discussion provided.	2 2
Other information					
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	7	Clear. Provided and details.	2 2

Appendix 6 continued

Table 15 shows the independent and agreed rating scores on each PRISMA item for each meta-analysis with comments

STUDY AUTHOR: Pineda-Lucatero, A., Trujillo-Hernández, B., Millán-Guerrero, R., & Vásquez, C. (2009)
STUDY TITLE: Prevalence of childhood sexual abuse among Mexican adolescents

STROBE	Item No	Recommendation	Page	Notes	Score
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	184	Doesn't specify study design Clearly stated Prevalence in the title. (However, it did not indicate whether this was a study undertaken or a review of the subject area of CSA) - did not specify study design	0 0
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	184	Methods too brief: when study undertaken, age of participants, analyses undertaken. A very brief summary of the background and method element of the study. An absence of information and lacking in terms of methodology.	1 1
Introduction					
Background/ rationale	2	Explain the scientific background and rationale for the investigation being reported	184-185	Too brief, insufficient detail on wider research and methodological / conceptual constraints. Spare and lacking in detail regarding the subject area. Although relevant information there was little attention gaining an understanding	1 1

				of previous work and references were dated. Evidence to support a study being done in Mexico but vague	
Objectives	3	State specific objectives, including any prespecified hypotheses	185	Objective is broader than methodology allows. Identified a principal objective of the study stated as determine the prevalence of CSA in adolescent boys and girls as well as the risk factors which it did not explain. Not clear or specific.	1 1
Methods					
Study design	4	Present key elements of study design early in the paper	185	Total sample: all students in municipality, but not demonstrated to be representative. Identified the study as a cross sectional study with adolescents. Referred to a protocol which was approved by a local research committee (no further information regarding this) and the local education department. Significantly lacking in detail related to the sample i.e. representativeness of the population under study	1 1
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	185	Clear. A date of data collection provided however there was no information regarding the geographical area, current population, the number of school	2 1

				which participated out of a total of 1197. No information regarding number approached, declined, refused. Did not explain that it was a voluntary study. Recruitment information was vague, and referred to "previously trained nurse" no further information provided, or attention to how the data were managed.	
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	185	Clear. Did not define adolescents, age or year of school approached. Simply stated all junior high school students from the municipality of Cuauhtémoc, Colima, Mexico.	2 1
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case	NA		NA
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	185	Sociodemographic info and CSA questions clearly reported, but summary outcomes not. Not clearly specified or defined. Focus on CSA only. Study adopted a very broad definition of CSA and identified of which did not appear to be informed by previous research and theory. No mention of outcome variables confounders	1 1

				or exposure.	
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	185	Questionnaire and method of delivery detailed. Broad set of questions assessing experience of CSA. Not a validated measure, no test of reliability or information of what informed the questions.	2 1
Bias	9	Describe any efforts to address potential sources of bias	NA	Not covered. No explicit mention of bias or assessment of the likelihood of relevant bias (direction and magnitude of potential bias not discussed or estimated).	0 0
Study size	10	Explain how the study size was arrived at	185	Rationale for N not given	1
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	185 – 186	Not clearly stated how responses to question items were later defined e.g. was 'did someone photograph/observe you in the nude' get classed as 'voyeurism'? Not clearly reported	1 1
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	186	Clear. Appropriate adjustment made for multiple t tests. Statistical methods, including those used to control for confounding were relatively clear and appropriate adjustment for multiple t-tests accounted for.	2 2
		(*b*) Describe any methods used to examine subgroups and interactions	186	Associations with family characteristics examined with odds ratio: complete reporting. Methods	2

				used to examine subgroups identified as associations with family characteristics examined with odds ratio: complete reporting	2
		(*c*) Explain how missing data were addressed	186	No discussion of adjustments for missing data. Response rate 89%. Not explicitly discussed. Although mentioned that a total of 1067 questionnaires of 1197 were adequately completed – no further discussion regarding missing values or how the data was treated - however did provide responses rate.	1 1
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy	185	Sampling strategy not well described and as such not clear whether specific analytic methods required. No clear description of any analytical methods taking account of sampling strategy.	1 1
		(*e*) Describe any sensitivity analyses	NA		NA
Results					
Participants	13*	(a) Report numbers of individuals at each stage of study—e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	186	Eligibility, sources and methods outlined. Eligibility, sources and methods were provided	2 2
		(b) Give reasons for non-participation at each stage	186	Reasons for non-completion not clear. Not clearly specified	1 1
		(c) Consider use of a flow diagram	186	Flow would have helped legibility. FC not provided and would have	1

				helped with transparency of review.	1
Descriptive data	14*	(a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders	187	Could other socio-demographic factors have been considered relevant? Partially addressed however, additional characteristics of study participants (e.g. demographic and social factors, could be considered along with further and information on exposures and potential confounders	1 1
		(b) Indicate number of participants with missing data for each variable of interest	185	Not given. Not clearly stated	0 0
		(c) *Cohort study*—Summarise follow-up time (e.g., average and total amount)	NA		NA
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time *Case-control study*—Report numbers in each exposure category, or summary measures of exposure *Cross-sectional study*—Report numbers of outcome events or summary measures	185/187	Full questionnaire detailed with family characteristics. Figures and questionnaire information included	2 2
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included	186/187	No clear confounders. No clear evidence of confounders	2 2
		(*b*) Report category boundaries when continuous variables were categorized	NA		NA
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA		NA

Other analyses	17	Report other analyses done—e.g. analyses of subgroups and interactions, and sensitivity analyses	187	All analyses seem to be reported fully .The analyses presented appeared to be reported fully in the text.	2 2
Discussion					
Key results	18	Summarise key results with reference to study objectives	187/ 188	Clear. Summary of the key findings linked to the study objectives and appeared clear.	2 2
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	187/188	Possible direction and of bias discussed and reasons hypothesized, but not magnitude, although comparison to wider literature is made. Some discussion regarding limitations of the study and of the factors which may have impacted on the outcome of the study. Although the authors appeared to make some vague assumptions about the data which, although some attempt to compare with previous research. Some discussion regarding potential bias although could be more detailed.	1 1
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	187/188	Suitably measured in interpretation. A relatively cautious interpretation was provided	2 2
Generalisability	21	Discuss the generalisability (external validity) of the study results	187 / 188	Sampling strategy not explicitly designed to be representative of national sample: so	1

			generalizability limited. Some recognition of this but not discussed in any detailed way or highlighted robustly. Findings were discussed generally in the context of the worldwide literature examining the prevalence of CSA. Some consideration of findings compared to other studies conducted but at times vague and lacking in detail i.e. the sampling strategy.	1
Other information				
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	No information about funding or interests.	0 0

Appendix 6 continued

Table 16 shows the independent and agreed rating scores on each PRISMA item for each meta-analysis with comments

STUDY AUTHOR: Helweg-Larsen, K., & Boving Larsen, H. (2006).
STUDY TITLE: The prevalence of unwanted and unlawful sexual experiences reported by Danish adolescents: Results from a national youth survey in 2002

	Item No	Recommendation	Page	Notes	Score
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1270	Doesn't specify study design. The study design is not explicitly discussed. Poor reporting	0 0
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	1270	Key information missing: when study undertaken and imprecise language 'relatively high'. Overall the abstract is lacking in key information to the reader related to study design.	1 1
Introduction					
Background/ Rationale	2	Explain the scientific background and rationale for the investigation being reported	1270	Not great detail provided on current state of the research or methodological rationale. Generally lacking in detail and the rational for the study is not explicit discussed and how the study aims to contribute to the field if CSA	1 1
Objectives	3	State specific objectives, including any prespecified hypotheses	1270	Clear. Relatively clear.	2 2

Methods					
Study design	4	Present key elements of study design early in the paper	1271	Doesn't specify randomisation methodology. Doesn't explain how it was ensured that sample was representative. The study design is not clear discussed especially regarding randomisation.	1 1
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	1271	Clear	2 2
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	1271	Clear	2 2
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case	NA		N/A
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	1271 -1272	Possible risk factors (effect modifiers) not detailed, although it is noted that sociodemographic factors were included in questionnaire, as were questions about health, domestic violence etc. Some discussion regarding the additional variables and questions covered within the questionnaire, however there was no explicit	1 1

				discussion relating to risk factors	
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	1271	Questionnaire and method of delivery detailed. Items mostly well covered - the measure used and how the study was conducted.	2 2
Bias	9	Describe any efforts to address potential sources of bias	1270	Methodology to minimise reporting bias and that due to non-participation discussed but not in methodology. The potential problem of using school attending adolescents as sample and generalising to population not discussed. Methodology for selection not clear. Spare attention to bias and lacking in detail.	1 1
Study size	10	Explain how the study size was arrived at	1271	Rationale for 11% of all 9th graders not given: why not 5% or 20% however, clearly described. Little discussion relating to the representativeness of the sample and the reason for basing the study on a certain cohort.	1 1
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	1272	Clear. Variables were generally described clearly, although more detail would have been helpful.	2 1
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	1272	Lacking detail of analyses: i.e. whether consideration of sampling methodology was included in treatment of data. Again the statistical methods were adequately reported and lacking in	1 1

				detail. Particularly with regards to analysis and data handling.	
		(*b*) Describe any methods used to examine subgroups and interactions	1272	Incomplete reporting of all factors included in regression analyses. Some evidence, however, lacking and appeared to be some evidence of selective reporting with analyses presented.	1 1
		(*c*) Explain how missing data were addressed	1271	Not much missing data, but methodology for addressing it not detailed: issue discussed later. Not clearly reported although there is reference in the text but not clear how it was managed.	1 1
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy	1272	Sampling strategy not well described and as such not clear whether specific analytic methods required. Some evidence vague regarding the type of analysis.	1 1
		(*e*) Describe any sensitivity analyses	NA		NA
Results					
Participants	13*	(a) Report numbers of individuals at each stage of study—e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	1271	Eligibility, sources and methods outlined. Mostly adequately reported	2 2
		(b) Give reasons for non-participation at each stage	1271	Non-participation clearly described but reasons not given due to anonymity. Mostly covered.	1 1

		(c) Consider use of a flow diagram	1271	Flow would have helped legibility. FC would of helped with transparency for the reader	1 1
Descriptive data	14*	(a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders	1274	Information on participants used for regression analyses not clear or complete. Not clear. Descriptive information not explicitly stated.	0 0
		(b) Indicate number of participants with missing data for each variable of interest	1274	Not given. Not provided	0 0
		(c) *Cohort study*—Summarise follow-up time (e.g., average and total amount)	NA		NA
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time *Case-control study*—Report numbers in each exposure category, or summary measures of exposure *Cross-sectional study*—Report numbers of outcome events or summary measures	1272	Yes included. Provided.	2
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included	1272	No clear confounders	2
		(*b*) Report category boundaries when continuous variables were categorized	NA		NA
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA		NA
Other analyses	17	Report other analyses done—e.g. analyses of subgroups and interactions, and sensitivity analyses	1273 - 1274	Reporting of risk factor analysis doesn't include non-significant comparisons. Not clearly described and reporting of risk factor analysis does not include	1

					non-significant comparisons.	
Discussion						
Key results	18	Summarise key results with reference to study objectives		1273	Yes. Key results were provided.	2 2
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	1274		Possible direction and magnitude of bias not discussed. Limitations were discussed, although limited and bias was not explicitly discussed. More discussion would have been helpful -how data fits in relation to the wider CSA findings.	1 1
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	1274		Interpretation light on comparative studies and not cautious in tone. Some discussion evident however sparse attention to the wider CSA research and additional moderating factors associated with the difficulties of conducting CSA/ epidemiological studies especially given difference in legal definitions using lower cut off age.	1 1
Generalisability	21	Discuss the generalisability (external validity) of the study results	1275		Makes generalisability claims without appropriate caveats. Limited and more evidence required to substantiate claims.	1 1
Other information						
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article	1275		Yes. Provided	2

Appendix 6

Table 17 shows the independent and agreed rating scores on each PRISMA item for each meta-analysis with comments

STUDY AUTHOR: Priebe, G., & Svedin, C. G. (2008).
STUDY TITLE: Child sexual abuse is largely hidden from the adult society: An epidemiological study of adolescents' disclosures

	Item No	Recommendation	Page	Notes	Score
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1095	Clearly indicated the study's design with a commonly used term in the title or the abstract	2 2
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	1095	Yes. Provided an informative and balanced summary of what was done and what was found	2 2
Introduction					
Background/ Rationale	2	Explain the scientific background and rationale for the investigation being reported	1096	Well referenced and detailed. The scientific background and rationale for the investigation being reported was well reported and referenced	2 2
Objectives	3	State specific objectives, including any prespecified hypotheses	1096	Clear. The objectives were clearly specified	2 2
Methods					
Study design	4	Present key elements of study design early in the paper	1097	Common guidelines' not referenced and validity of sampling to get a nationally representative sample therefore unclear. Some ambiguity	1 1

				regarding references and there was a lack of detail pertaining to the national representativeness sampling	
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	1097	Clear. Setting, including locations, and relevant dates and data collection were clearly stated	2 2
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	1097	Clear. The eligibility criteria, and the sources and methods of selection of participants were well covered.	2 2
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case	NA		NA
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	1097 / 1098	Satisfactorily described. The outcomes, and effect modifiers etc. were relatively well covered	2 2
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	1097 / 1098	Questionnaire and method of delivery detailed. There was detailed discussion regarding the questionnaire and the methodology and procedure	2 2
Bias	9	Describe any efforts to address potential sources of bias	NA	Not covered. Not explicitly addressed	0 0
Study size	10	Explain how the study size was arrived at	1097	Rationale for N not given. Not	1

				explicitly addressed	1
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	1097 / 1098	Information included in results section but not in methodology. There was little detail regarding the variables included in the method section.	0 0
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	1097 / 1098	Statistical methods not described in methodology. Items not covered in the methodology section.	0 0
		(*b*) Describe any methods used to examine subgroups and interactions	1097 / 1098	Statistical methods not described in methodology. Items not covered in the methodology section	0 0
		(*c*) Explain how missing data were addressed	1097 / 1098	Statistical methods not described in methodology. Items not covered in the methodology section	0 0
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy	1097 / 1098	Statistical methods not described in methodology. Items not covered in the methodology section	0 0
		(*e*) Describe any sensitivity analyses	NA		NA
Results			**Page**	**Notes**	**Score**
Participants	13*	(a) Report numbers of individuals at each stage of study—e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	1097	Clear. Reported numbers of individuals at each stage of study, including eligibility etc.	2 2
		(b) Give reasons for non-participation at each stage	1097	Clear, however, high number 'choosing' not to participate and not	1

				clear if this includes non-attendance, truancy etc. as well as active opting out. Information was given regarding the numbers that did not participate however the reasons for non-participation at each stage not clear.	1
		(c) Consider use of a flow diagram	1097	Flow would have helped clarity of above issue. FC not included	1 1
Descriptive data	14*	(a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders	1097 / 1098	Clear. Information relating to the characteristics of study participants (e.g. demographic, clinical, social) was well covered	2 2
		(b) Indicate number of participants with missing data for each variable of interest	1098	Well covered. The number of participants with missing data for each variable of interest was provided	2 2
		(c) *Cohort study*—Summarise follow-up time (e.g., average and total amount)	NA		NA
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time *Case-control study*—Report numbers in each exposure category, or summary measures of exposure *Cross-sectional study*—Report numbers of outcome events or summary measures	1097 / 1103	Yes. The information was provided clearly	2 2
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included	1097 / 1103	Well reported and clear. The main results were presented clearly	2 2
		(*b*) Report category boundaries when continuous variables were categorized	1097 / 1103	Reported. The main results were presented clearly	2 2

		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA		NA
Other analyses	17	Report other analyses done—e.g. analyses of subgroups and interactions, and sensitivity analyses	1103 / 1104	Covered. Other analyses conducted in the study were well reported	2 2
Discussion					
Key results	18	Summarise key results with reference to study objectives	1103 /1104	Clear. The key results were summarised in reference to the study objectives quite clearly	2 2
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	1106	Caveats thoughtfully described and sources and possible direction of bias outlined. The authors discussed the limitations of the study, which included taking into account potential sources and direction of bias or imprecision	2 2
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	1103 / 1107	Detailed and well referenced. A measured overall interpretation of results with consideration of the objectives and limitations and results provided.	2 2
Generalisability	21	Discuss the generalisability (external validity) of the study results	1106	External validity discussed critically. Some discussion of the generalisability (external validity) of the study findings provided	2 2
Other information					
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	1095	Reported. Provided details	2 2

Appendix 7: Interobserver reliability

		Observer 1			
		0	**1**	**2**	**Total**
Observer 2	**0**	16	0	0	16
	1	1	53	0	54
	2	0	10	61	71
	Total	17	63	61	141

Number of observed agreements: 130 (92.20% of the observations)

Number of agreements expected by chance: 56.8 (40.26% of the observations)

Kappa= 0.869

SE of kappa = 0.038

95% confidence interval: From 0.795 to 0.944

The strength of agreement is considered to be 'very good'.

http://graphpad.com/quickcalcs/kappa1.cfm

Reference:

Viera, A.J., & Garrett, J.M. (2005). Understanding interobserver agreement: The kappa statistic. *Family medicine, 37,* 360-3.

Appendix 8: Individual study prevalence data

Tables 18 to 26 show the prevalence data from each of the included studies

Table 18: Chan et al., 2013

1. Chan, Yan, Brownridge, & Ip (2013).
Associating Child Sexual Abuse with Child Victimisation in China

ABUSE	LT prevalence			Past year prevalence		
	All	Boys	Girls	All	Boys	Girls
	18,341	9,773	8,568	18341	9773	8568
CSA	0.052	0.061	0.041	0.038	0.048	0.027
Physical, no intercourse	0.042	0.050	0.034	0.036	0.047	0.24
Attempted/ completed	NR	NR	NR	NR	NR	NR
Penetration	0.044	0.055	0.032	0.033	0.040	0.24
Non-contact	0.068	0.081	0.054	0.052	0.063	0.040
All CSA	0.080	0.093	0.066	0.064	0.078	0.047

Table 19: Chen et al., 2004

2. Chen, J. W., Dunne, M. P., & Han, P. (2004)
Child sexual abuse in China: a study of adolescents in four provinces

ABUSE	LT prevalence			Past year prevalence		
	All	Boys	Girls			
	2300	1145	1155			
CSA	0.070	0.050	0.089	-	-	-
Physical, no intercourse	NR	NR	NR	-	-	-
Attempted/ completed	NR	NR	NR	-	-	-
Penetration	NR	NR	NR	-	-	-
Non-contact	0.109	0.088	0.129	-	-	-
All CSA	0.136	0.105	0.167	-	-	-

Table 20: Chen et al., 2006

3. Chen, JQ, Dunne, M. P., & Han, P. (2006).
Child Sexual abuse in Henan province, China: associations with sadness, suicidality, and risk behaviours among adolescent girls.

ABUSE	LT prevalence			Past year prevalence		
	All 351	Boys	Girls 351	All	Boys	Girls
CSA	0.140	NR	0.141	-	-	-
Physical, no intercourse	NR	NR	NR	-	-	-
Attempted/ completed	NR	NR	NR	-	-	-
Penetration	NR	NR	NR	-	-	-
Non-contact	0.174	NR	0.174	-	-	-
All CSA	0.219	NR	0.219	-	-	-

Table 21: Chen et al., 2006

4. Lin, D., Li, X., Fan, X., & Fang, X. (2011)
Child sexual abuse and its relationship with health risk behaviours among rural children and adolescents in Hunan, China

ABUSE	LT prevalence			Past year prevalence		
	All 683	Boys 326	Girls 346	All	Boys	Girls
CSA	0.020	0.021	0.017	-	-	-
Physical, no intercourse	NR	NR	NR	-	-	-
Attempted/ completed	NR	NR	NR	-	-	-
Penetration	NR	NR	NR	-	-	-
Non-contact	0.066	0.077	0.055	-	-	-
All CSA	0.180	0.215	0.142	-	-	-

Table 22: Helweg-Larsen et al., 2006

5. Helweg-Larson, K., & Bøving, H. (2006).
The prevalence of unwanted and unlawful sexual experiences reported by Danish adolescents: Results from a national youth survey.

ABUSE	LT prevalence			Past year prevalence		
	All 5829	Boys 2910	Girls 2918		boys	Girls
CSA*	0.102	0.057	0.147			
Physical, no intercourse	0.035	0.015	0.055			
Attempted/ completed	0.067	0.042	0.092	-	-	-
Penetration	NR	NR	NR	-	-	-
Non-contact	0.010	0.010	0.011	-	-	-
All CSA	0.112	0.067	0.158	-	-	-

* *Physical, no intercourse and attempted/completed combined*

Table 23: Pineda-Lucatero et al., 2008

6. Pineda-Lucatero, Trujillo-Hernández, Millán-Guerrero & Vásquez (2008)
Prevalence of childhood sexual abuse among Mexican adolescents

ABUSE	LT prevalence			Past year prevalence		
	All 1067	Boys 490	Girls 577			
CSA	0.140	0.173	0.113	-	-	-
Physical, no intercourse	NR	NR	NR	-	-	-
Attempted/ completed	NR	NR	NR	-	-	-
Penetration	NR	NR	NR	-	-	-
Non-contact	0.047	0.000	0.087	-	-	-
All CSA	0.187	0.173	0.199	-	-	-

Table 24: Priebe & Svedin et al., 2008

7. Priebe, G., & Svedin, C.G. (2008).

Child sexual abuse is largely hidden from the adult society. An epidemiological study of adolescents' disclosures.

ABUSE	LT prevalence			Past year prevalence		
	All 4339	Boys 2015	Girls 2324			
Contact CSA**	0.398	0.185	0.583	-	-	-
*CSA without penetration**	0.301	0.130	0.448	-	-	-
*CSA with penetration***	0.398	0.185	0.583	-	-	-
Attempted/ completed	NR	NR	NR	-	-	-
Penetration	0.098	0.055	0.135	-	-	-
Non-contact	0.054	0.042	0.065	-	-	-
All CSA	0.452	0.227	0.648	-	-	-

Table 25: Radford et al., 2011

8. Radford, L., Corral, S., Bradley, C., Fisher, H., Bassett, C., & Howat, N. (2011).

Child Abuse and Neglect in the UK Today. London: National Society for the Prevention of Cruelty to Children.

ABUSE	LT prevalence			Past year prevalence		
	All 2275	Boys 1126	Girls 1149	All 2275	Boys	Girls
CSA	0.051	0.028	0.072	0.021	0.013	0.029
Physical, no intercourse	NR	NR	NR	NR	NR	NR
Attempted/ completed	NR	NR	NR	NR	NR	NR
Penetration	0.009	0.002	0.017	0.004	0.001	0.008
Non-contact	0.146	0.109	0.185	0.086	0.060	0.013
All CSA	0.165	0.125	0.208	0.940	0.068	0.122

Table 26: Mohler-Kuo et al., 2013

9. Mohler-Kuo, Landolt, Maier, Meidert, Schönbucher & Schnyder (2013) Child Sexual Abuse Revisited: A Population-Based Cross-Sectional Study Among Swiss Adolescents

ABUSE	LT prevalence			Past year prevalence		
	All	Boys	Girls	All	Boys	Girls
	6743	3524	3219	6743	3524	3219
CSA	0.100	0.051	0.154	0.067	0.036	0.010
Physical, no intercourse	0.097	0.048	0.149	0.063	0.005	0.015
Attempted/ completed	NR	NR	NR	NR	NR	NR
Penetration	0.015	0.006	0.025	0.010	0.033	0.096
Non-contact	0.246	0.149	0.351	0.169	0.111	0.231
All CSA	0.282	0.172	0.402	0.196	0.128	0.271

Appendix 9: Overall summary of prevalence outcomes

Table 27 shows an overall summary of outcomes of prevalence studies

Study	Overall		Males		Females	
	Contact CSA*	Non-contact CSA	Contact CSA	Non-contact CSA	Contact CSA	Non-contact CSA
1. Chan et al., 2013	0.052	0.068	0.061	0.081	0.041	0.054
2. Chen et al., 2004	0.070	0.109	0.050	0.088	0.089	0.129
3. Chen et al., 2006	0.140	0.174	NR	NR	0.141	0.174
4. Lin et al., 2011	0.020	0.066	0.021	0.077	0.017	0.055
5. Helweg-Larson et al., 2006	0.102	0.010	0.057	0.010	0.147	0.011
6. Pineda-Lucatero et al., 2008	0.140	0.047	0.173	0.000	0.113	0.087
7. Priebe and Svedin 2008	0.398	0.054	0.185	0.042	0.583	0.065
8. Radford et al., 2011	0.051	0.146	0.028	0.109	0.072	0.185
9. Mohler-Kuo et al., 2013	0.100	0.246	0.051	0.149	0.154	0.351

Appendix 10: Data from meta-analyses

Tables 28 to 33 show overall sample sizes and outcomes for each meta-analysis conducted across contact and non-contact CSA for males and females

Table 28 shows the prevalence of contact CSA for males and females combined

Study	**Sample size**	**Outcome (es)**	**Rate (95% CI)**
Chan et al., 2013	18341	0.052	5.2 (4.87-5.53)
Chen et al., 2004	2300	0.070	7.0 (5.92-8.08)
Chen et al., 2006	351	0.140	14.0 (10.09-17.91)
Lin et al 2011	683	0.020	2.0 (0.94-3.06)
Helweg-Larson et al., 2006	5829	0.102	10.2 (9.38-11.02)
Pineda-Lucatero et al., 2008	1067	0.140	14 (11.75-16.25)
Priebe and Svedin 2008	4339	0.398	39.8 (37.92-41.68)
Radford et al., 2011	2275	0.051	5.1 (4.17-6.03
Mohler-Kuo et al., 2013	6743	0.100	10 (9.25-10.76)
Effect Summary			11.84(7.66-16.02)
Effect Summary (minus 7)			8.15 (5.96-10.35)
(*K*, 9; df, 8) Random effects Model (I^2 = 0%)			

Table 29 shows the prevalence of non-contact CSA for males and females combined

Study	**Sample size**	**Outcome (es)**	**Rate (95% CI)**
Chan et al., 2013	18341	0.068	6.8 (6.43-7.18
Chen et al., 2004	2300	0.109	10.9 (9.55-12.25)
Chen et al., 2006	351	0.174	17.4 (13.04-21.76)
Lin et al 2011	683	0.066	6.6 (4.67-8.53)
Helweg-Larson et al., 2006	5829	0.010	1.0 (0.74-1.26)
Pineda-Lucatero et al., 2008	1067	0.047	4.7 (3.39-6.01)
Priebe and Svedin 2008	4339	0.054	5.4 (4.71-6.10)
Radford et al., 2011	2275	0.146	14.6 (13.03-16.17)
Mohler-Kuo et al., 2013	6743	0.246	24.6 (23.42-25.80)
Effect Summary		0.101176	10.12 (6.17-14.07)
(*K*, 9; df, 8) Random effects Model (I^2= 0%)			

Table 30 shows the prevalence of contact CSA for males

Study	Sample size	Outcome (es)	Rate (95% CI)
Chan et al., 2013	9773	0.061	6.1 (5.61-6.59)
Chen et al., 2004	1145	0.050	5 (3.70-6.29)
Lin et al., 2011	326	0.021	2.1 (0.52-3.67)
Helweg-Larson et al., 2006	2910	0.057	5.7 (4.83-6.56)
Pineda-Lucatero et al., 2008	490	0.173	17.3 (13.61-20.98)
Priebe and Svedin 2008	2015	0.185	18.5 (16.62-20.38)
Radford et al., 2011	1126	0.028	2.8 (1.82-3.77)
Mohler-Kuo et al., 2013	3524	0.051	5.1 (4.35-5.84)
Effect Summary		0.074	7.45 (5.22-9.69)
(*K*, 8; df, 7) Random effects Model (I^2= 0%)			

Table 31 shows the prevalence of non-contact CSA for males

Study	Sample size	Outcome (es)	Rate (95% CI)
Chan et al., 2013	9773	0.081	8.1 (7.54-8.66)
Chen et al., 2004	1145	0.088	8.8 (7.08-10.52)
Lin et al., 2011	326	0.077	7.7 (4.69-10.71)
Helweg-Larson et al., 2006	2910	0.010	1 (0.64-1.36)
Pineda-Lucatero et al., 2008	490	0.000	0.00
Priebe and Svedin 2008	2015	0.042	4.2 (3.31-5.09)
Radford et al., 2011	1126	0.109	10.9 (8.98-12.83)
Mohler-Kuo et al., 2013	3524	0.149	14.9 (13.63-16.17)
Effect Summary		0.079	7.92 (4.05-11.78)
(*K*, 8; df, 7) Random effects Model (I^2= 0%)			

Table 32 shows the prevalence of contact CSA for females

Study	Sample size	Outcome (es)	Rate (95% CI)
Chan et al., 2013	8568	0.041	4.1 (3.67-4.53)
Chen et al., 2004	1155	0.089	8.9 (7.18-10.62)
Chen et al., 2006	351	0.141	14.1 (10.17-18.03)
Lin et al., 2011	346	0.017	1.7 (0.32-3.07)
Helweg-Larson et al., 2006	2918	0.147	14.7 (13.31-16.09)
Pineda-Lucatero et al., 2008	577	0.113	11.3 (8.55-14.04)
Priebe and Svedin 2008	2324	0.583	58.3 (55.19-61.40)
Radford et al., 2011	1149	0.072	7.2 (5.65-8.75
Mohler-Kuo et al., 2013	3219	0.154	15.4 (14.04-16.76)
Effect Summary		0.149	14.99 (8.57-21.39)
Effect Summary (minus 7)			9.60 (5.70-13.49)
(*K*, 9; df, 8) Random effects Model (I^2 = 0%)			

Table 33 shows the prevalence of non-contact CSA for females

Study	Sample size	Outcome (es)	Rate (95% CI)
Chan et al., 2013	8568	0.054	5.4 (4.90-5.89)
Chen et al., 2004	1155	0.129	12.9 (10.83-14.97)
Chen et al., 2006	351	0.174	17.4 (13.03-21.76)
Lin et al., 2011	346	0.055	5.5 (3.03-7.97)
Helweg-Larson et al., 2006	2918	0.011	1.1 (0.72-1.48)
Pineda-Lucatero et al., 2008	577	0.087	8.7 (6.29-11.10)
Priebe and Svedin 2008	2324	0.065	6.5 (5.46-7.53)
Radford et al., 2011	1149	0.185	18.5 (16.01-20.98)
Mohler-Kuo et al., 2013	3219	0.351	35.1 (33.05-37.14)
Effect Summary		0.122	12.25 (7.74-16.75)
(*K*, 9; df, 8) Random effects Model (I^2 = 0%)			

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University of Edinburgh Ethics Review Outcome Letter

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10 October 2013

Dear Christina Power,

Application for Level 1 Approval

Re: Child Sexual Abuse: A systematic review of meta-analyses of child sexual abuse and a meta-analysis of the prevalence of child sexual abuse as reported by adolescents within the past 10 years

Thank you for submitting the above research project for review by the Section of Clinical Psychology Ethics Research Panel. I can confirm that the submission has been independently reviewed and was approved on the 4th October 2013.

Should there be any change to the research protocol it is important that you alert us to this as this may necessitate further review.

Yours sincerely,

Kirsty Gardner
Secretary
Clinical Psychology